DOMESTIC ENGINEERING

A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation.

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THE WAYS OF BUSINESS.

ONE of the evidences of the trend of the times was brought forcibly to "Domestic Engineering" some weeks ago. A letter was received from a manufacturer stating that reports had been circulated that he had gone out of business or expected to do so, and asking us to notify the trade that there was absolutely no truth in the report.

A mention of this fact was made at the time, and the incident was closed.

Several most interesting points were brought up by the incident. This manufacturer is not an advertiser. Though he has one of the largest plants of the kind in the country, his goods are to a large extent marketed through jobbers whose own trade names or marks are in many cases used instead of that of the manufacturer.

The manufacturer's individuality is thus lost. He must sell his goods on a close margin as his customers will only buy from him as long as his prices remain equal or his service remains superior to that of his competitors.

He has failed to keep pace with the demand for goods carrying the manufacturer's trade mark—a guarantee of quality, with the backing of the maker as well as the seller, to bank upon. And today advertised trademarked goods must be fully considered.

The fact that he has failed to appreciate the value of advertising to keep **his** product, **his** business, **his** location constantly before the trade, has made him the prey of designing slanderers, whose only hope is to profit by his distress.

How rapidly and with what destructive force such reports circulate was made evident in this case. The methods used by the authors of the report were none the less contemptible when directed at a manufacturer whose sole reliance was upon cheapness of price and personality and not upon the good will of a multitude of buyers, secured through years of publicity.

This man, who has not appreciated the value of the trade paper in building **up** his business, now appeals to "Domestic Engineering" to prevent the tearing **down** of what he has succeeded in getting together. Verily, the trade paper will be at hand when the signals of distress are hoisted.

A NEW SERIES OF ARTICLES.

"Business Methods for the Master Plumber." That is the title of a series of articles, the introduction to which appears on page 70 of this number of "Domestic Engineering."

The title is significant of what may be expected from the pen of the author, Wesley A. Fink, whose experience in the accounting end of the plumbing business has been wide and varied. His appreciation of the needs of the master plumber, both large and small, has resulted in a series of articles that should not be missed by any man who is not too firmly convinced that he knows it all.

A Trenton, N. J., Public Comfort Station

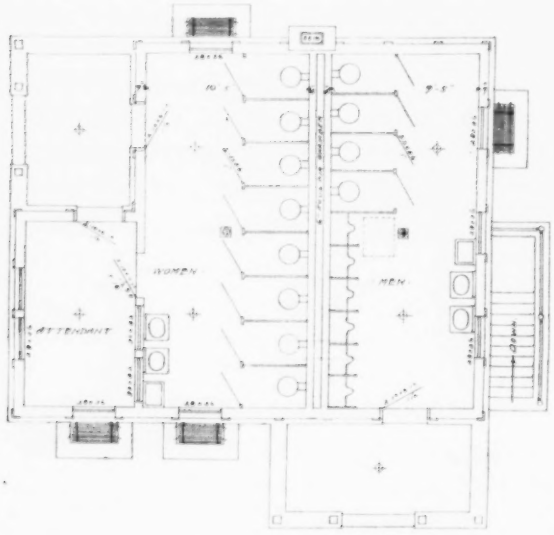
The Station in Cadwallader Park One of Practical Convenience. Some Suggestions Worthy of the Attention of Master Plumbers

ATTRACTIVENESS combined with practical utility characterizes the public comfort station in Cadwallader Park, Trenton, New Jersey, an exterior illustration of which appears in our frontispiece this week.

The building is substantially constructed of brick and concrete, with a roof of tile, and is pleasantly situated in a wooded part of the park, yet easy of access from all points.

In its physical characteristics this comfort station combines the best sanitary practice.

The water supply is furnished through a 3-in. galvanized iron pipe, tapped into a 4-in. main at a distance of



FIRST FLOOR PLAN

about 80 ft. from the building. From the wall of the basement, after the installation of a gate valve, a 2½ in. pipe is run behind the closets, with a 1¼ in. tee to each closet. A 1¼ in. supply is run to the urinal tank.

On the 1¼ in. pipe behind each closet and on the pipe leading to the urinal tank, are placed lock shield globe valves provided with keys.

The cast iron soil pipe from the lavatories, slop sink and floor drains is 3 in., while that from the closets is 5 in., connecting outside the foundation walls to the sewer with 6 in. terra cotta pipe.

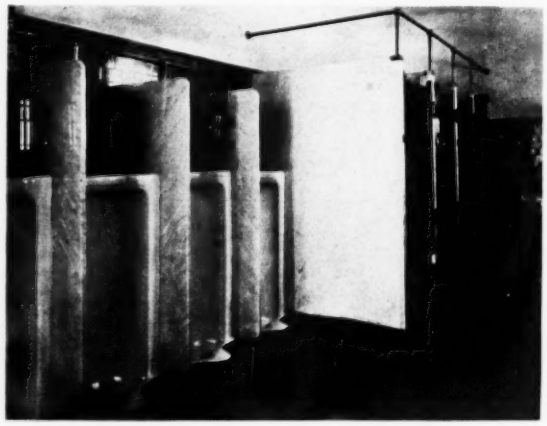
The lavatories and slop sink are vented by a 3 in. soil pipe to the loft, which is connected to the main vent before entering the chimney. The main vent is of 5 in. iron pipe to the loft, where it enters the chimney and is continued to the top.

The closets are of the wash-down syphon type, with Boston vent and automatic valve. They are fitted with heavy oak non-split seats and extra heavy nickeled hinges. Brass floor flanges are fitted to all closets.

The six urinals are each 24 in. wide, with integral drip-receptors, a ten-gallon automatic iron tank, enameled in and out, nickel plated brass brackets, spreaders and inlet couplings, brass waste plugs and couplings and removable porcelain gratings.

The slop sinks are 20x16, enameled iron, in and out, with single hose end faucet.

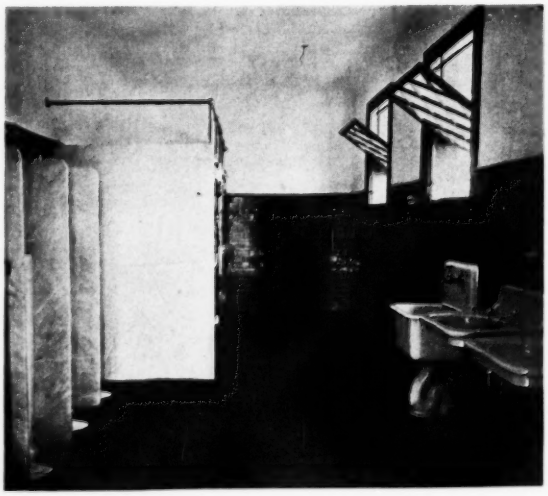
Lavatories are of the wall support type with wall



Urinals in Cadwallader Park Comfort Station.

supply and waste, and single compression faucets.

The closets are placed in stalls with partitions of Italian marble. These partitions are 1 in. thick, 5 ft. high, set 12 in. above the floor, and 4 ft. deep, except the one partition adjoining the urinals, which is 6 ft. high, and runs to the floor. The door fronts are 1¼ in. thick. The



Another View of Men's Side of Cadwallader Park Station.

urinal partitions are 21 in. wide, 5 ft. 3 in. high, and 1 in. thick, of the same material.

The architect and engineer was Wm. P. Endebroch and the plumbing was done by Piper Bros., all of Trenton. The building has now been in use a little over two years.

Chicago Women Advocate Comfort Stations

Definite Results Being Accomplished Through the Interest and Enthusiasm of Chicago Women, Who Believe in Their Value

CHICAGO—the city of "I Will"—where things are accomplished, has not yet awakened to the need of public comfort stations in its loop district. "Domestic Engineering" some weeks ago published an article by Henry M. Hyde on the subject, which aroused much interest.

That Chicago is to have more public comfort stations is the resolve of the Chicago Woman's Aid, an organization of Chicago women whose object is the betterment of public service.

Inspired by their success in securing a new women's comfor station in the Chicago public library, these ladies have undertaken to arouse public opinion to the end that adequate toilet accommodations will be afforded to the thousands of men and women whose daily sojourn is in the loop district.

They have had prepared a four-page folder which sets forth the needs of the city and brings up a number of interesting phases of the subject. The title of this circular is: "In the Interest of Public Health, Public Comfort, Public Morality, Chicago needs Public Comfort Stations."

The text of the folder follows:

What Is a Comfort Station?

A comfort station is a building which contains water closets, wash stands, drinking fountains and whenever possible, rest rooms. It may be built either above ground or underground. The majority are built below the surface of the streets or city squares to economize space, or because there may be no available property in the desired locality.

Who Needs Them?

The need for these public conveniences which will be open day and night, holidays and Sundays, for all classes, is very obvious. Women and children who spend the day in town, the transient city visitor who does not stop at a hotel, the stranger who is accustomed to these public utilities in his home city, workingmen, letter carriers, street cleaners, police officers on duty, chauffeurs, teamsters, newsboys and messenger boys should be provided for in the interest of public health and decency.

In Europe.

Europe leads the world in the public comfort accommodation provided by cities for the convenience and health of its people. London alone has spent approximately $800,000 for the construction of stations and about $500,000 annually for maintenance. Berlin, Brussels, Paris and many other European cities count them by the hundreds.

In America.

New York is the leader of American cities, as may be expected, having an extensive, well equipped system of public comfort stations. Cleveland, Washington, Detroit, Baltimore, St. Louis and Pittsburgh tip the scales for commodious up-to-date stations. All over the United States even in comparatively small cities, Public Comfort Stations and drinking fountains are being provided by the municipal authorities.

In Chicago.

Chicago, the second largest city in the United States, has **7,000 saloons and 2 public comfort stations.**

Chicago Healthful comes first and this means Chicago Beautiful and Chicago Dutiful.

What Does This Mean?

It means that upon the saloon proprietor is forced the necessity for providing public conveniences, thus fostering the drink habit through no fault of his. It also means that many of the common complaints which physicians meet with today are due very largely to the dangers caused by the lack of sanitary public toilets.

Public Health Demands Public Toilets.

If Chicago is to have Public Comfort Stations next year, it is necessary to have an appropriation made in the city budget NOW.

Will You Help?

The Public Comfort Station Committee of the Chicago Woman's Aid, Mrs. Lee J. Lesser, Secretary, 5431 East End Avenue; Mrs. Chas. S. Ullman, Chairman, 4545 Forrestville Avenue.

An immediate suggestion for a public comfort station: The space under the sidewalk at the Randolph Street end of the Public Library Building which has been offered to the city for this purpose by the Library Board of Directors. The estimated cost of an adequate station for men and women to be about $25,000.

SOME APPRECIATION FROM AN OLD FRIEND.

Editor "Domestic Engineering:" Your letter of the 4th was forwarded to me from New Orleans. It is a familiar heading on the same old salmon paper, so familiar to me as the color of that splendid old weekly caller, which I knew so well when I belonged to the master plumbers' fraternity.

I have been here in St. Louis some years and am connected with the Westinghouse Electric and Mfg. Co.

I said, the salmon paper with the letterhead of "Domestic Engineering" was once most familiar when I was fortunate to personally know and enjoy the friendship of Col. John K. Allen.

I enjoyed that good man's friendship for a long time, but our correspondence was dropped for several years. I do hope he is enjoying the best of health and that everything in life goes smoothly with him. His genial spirit made me a fast friend of "Domestic Engineering" and his ability when at its head held me fast as an admirer of your publication.

I have no doubt but what you are carrying on the good work begun by Col. Allen, although I have not seen a copy for some years.

I do not see how an up-to-date master plumber—indeed, how a journeyman plumber—can well afford to do without your fine journal—a keen advisor and educator in its line.

S. Botiler Thompson.

605 Nat. Bank of Com. Bldg., St. Louis, Mo.

Business Methods for the Master Plumber

I.—The Present Uplift Movement in the Locals of Master Plumbers and Master Steam and Hot Water Fitters—A Campaign of Education

By WESLEY A. FINK

IT is very gratifying to note the present wide uplift movement, among the local associations of the National Association of Master Plumbers and the National Association of Master Steam and Hot Water Fitters, as well as the campaign of education carried on by such progressive trade papers as "Domestic Engineering." The aims of these efforts are for a higher standard of business methods, personal integrity and commercial morality, a wider comprehension of the rights of master plumbers and fitters in their community, and a proper consideration from supply houses and manufacturers.

Wesley A. Fink.

Recognizing that many troubles have been caused by a lack of knowledge and a misunderstanding of details in the plumbing and heating contracting business, many local associations have done good work in establishing friendly relations between competitors with the result that members have given each other important pointers along the line of figuring costs and overhead expenses. In some cases they have even succeeded in establishing collection departments and credit systems and adopted such other methods as have improved local trade conditions with fairness alike to the customer and the producer—the master plumber and fitter.

Assisting the associations in these efforts the trade papers have been of great value. They have published the results of wearisome and costly research and experimental work, and thus made them available for practical application in the every day work of the plumbers and fitters, both as professional mechanics and as business men.

In speaking of the difficulties encountered by a mechanic in rising to a position in which he can turn his business abilities to full account, the chief stress is generally laid upon his lack of capital, but this is really not always his chief difficulty. Mechanics, who possess business ability and probity as well as the "personal capital" of a good reputation among their associates and in their communities, will have little difficulty in getting command of enough "material capital" for a business undertaking. But perhaps a greater, though not so conspicuous hindrance to the rise of a mechanic, is the growing complexity of business. The head of a business has nowadays to think of many things, which the business man of earlier days knew nothing about; and these are the difficulties for which the training in the workshop affords least preparation. Against this, however, must be set the rapid improvement of the education of the present day workingman and mechanic, not only at school, but, what is more important, in after-life by newspapers and trade papers, such as "Domestic Engineering" for the plumbing and heating trades, and by membership in societies and trade associations as well as by attending evening classes in commercial and business colleges.

The problem of conducting plumbing and heating establishments by economic and safe profit-yielding business methods is now being solved by the best men in these trades, and the trade papers are publishing the solutions for the benefit of their readers in such a way that they can easily be comprehended. It is therefore of vital importance to be a close reader of one's trade paper to make sure that no vital improvement is devised affecting the business or mechanical end of one's establishment without deriving the resulting profit therefrom.

There are two classes of employers in the plumbing and heating business. One is the practical plumber, without any business training or experience; the other is the practical business man without any practical plumbing or heating experience. A majority of the plumbing and heating contractors have learned the trade, but some of them have been bookkeepers or draughtsmen. Some of these latter are to be found in every city, and, strange enough, sometimes they average higher in the scale of success than does the practical contingent. This is food for thought. And the first thought is that it possibly accounts for the fact that many plumbers are not as prosperous as they should wish to be. There is one thing sure, and it is this, that as a rule the successful business manager should not be too close to the wheels of his business.

The great manager of the big plumbing or heating business in the future will be a man who will sell his product for a little more than it has cost him to produce that product. The formula is simple and no harder than that task which confronted Marshall Field, John D. Rockefeller or John Wanamaker. This great manager of a great plumbing or heating business could probably make as much money at manufacturing carpets and rugs, or managing a railroad. He will be as shrewd as a banker, as suave as a politician, and as powerful as a magnate. He will be all these and more—the sum total making him the head of his great plumbing and heating business.

The most prosperous plumbing and heating business that the writer is acquainted with is a partnership firm in Philadelphia, composed of two men of opposite training. The one, a practical plumber, who started in as a boy to learn the trade in one of the largest plumbing shops in the City of Brotherly Love; the other, a practical business man, who started in as office boy with the same concern. The former was advanced to the position of foreman, the other to the position of bookkeeper; and later, owing to illness and old age of the proprietor, the entire business was placed under the management of these two younger men, the one a

practical plumber and the other a practical business manager. Under their shrewd management, the business grew, they employed about seventy-five hands, the sales amounted to over four times their capital, and one year the net profits of the business averaged over 50 per cent of the capital invested, after deducting large salaries for the proprietor and these two managers. Yet some say there is no money to be made in the plumbing business.

These two practical men are now engaged together in a business of their own and are rated as among the most prosperous plumbing and heating contractors in their city.

The writer can vouch for the truth of the above fact, as he learned his first lessons in accounting and business management under the immediate supervision of the practical business man, while he and the practical plumber were managing the business of their employer at the time of his illness and old age.

The least profitable plumbing and heating business that the writer was acquainted with was a large concern, composed of two practical plumbers with no knowledge of the financial side of the business. They did a large business, employing at one time almost one hundred and fifty hands; worked night and day and Sundays themselves, trying to make a success of their business, but had no accurate bookkeeping system, made no attempt to keep the cost of work performed, accepted large contracts at the lowest bidder's figures without even estimating the cost of same, on the assumption that if the other fellow could do it at that figure, they also could. As a consequence the returns of the business amounted to less than the wages of their foremen, and they did not average over two per cent net profits on their capital invested in their business. Of course, they said there was no money in the plumbing business.

The writer can also vouch for the truth of the above statement, as he was called in to audit their books and install a new accounting system for them.

Without aiming at giving an exhaustive account of the manner in which the plumbing and heating business should be conducted, it is the intention to supply the plumbing and heating contractors in these articles with that specialized information which he may require, and at the same time give him knowledge of business methods which can hardly fail to be of assistance to him in the correct keeping of his accounts, upon a system specially adapted to his requirements and therefore involving a minimum expenditure of labor. The technical points in connection with the plumbing and heating trade will receive as much attention as is necessary to fully elucidate the system of accounting advocated.

Phoenix, Ariz.—J. F. Donovan has opened a plumbing establishment in this city.

St. Cloud, Minn.—The partnership of the plumbing firm of Burton & Martin, in this city, has been dissolved. Mr. Martin retires and Mr. Burton will continue the business at the old stand.

Lake Geneva, Wis.—Grant R. Searls, formerly partner in the plumbing firm of Ronk & Searls, of Delavan, Wis., has purchased C. E. Frederick's plumbing business on Main Street in this city. Failing health compelled Mr. Frederick to sell out. He had been in business here since 1890 and had built up a large and busy establishment.

THAWING OUT A FREEZUP IN NORTHERN MICHIGAN.

Our illustration herewith shows the method used by E. A. Hamilton, of Hancock, Mich., to thaw out freezups. Instead of a small copper steamer which most master plumbers use, Mr. Hamilton has a small expansion tank tested to 150 pounds, which is rigged with a pressure gauge and safety valve. In this tank he carried from sixty to eighty pounds steam pressure. The tank is set up on legs with the furnace beneath. Mr. Hamilton says he has thawed out water service for a distance of fifty-five feet in one stretch under the ground.

E. A. Hamilton's Apprentice Thawing out a Freezeup in Hancock, Mich.

The illustration shows Mr. Hamilton's apprentice at work on one of these jobs last winter in the upper peninsula. The photograph was taken by one of his plumbers.

The Value of a Good Signature.

The keystone of the German financial arch is credit; that is to say, a conviction upon which general practice is based, that there is no better form of financial security than a good signature.

The time is coming when the products of a manufacturer will be judged by the value of his name. If his name has become synonymous with high quality goods—goods that are uniform and true to claims made, he need have no fear of loss of business or of dangerous competition.

The public will in turn learn that it pays to buy only such goods that bear an unquestioned name. The value of a good name is beyond computation and competition.

Questions and Answers

POORLY ARRANGED BOILER CONNECTIONS.

Editor "Domestic Engineering":—Herewith you will find a sketch (Fig. 1) of a hot water supply system, which does not always give satisfaction. Sometimes, when both fires are going, I have the finest results anyone can desire. At other times the hot water circulates the wrong way. If the range only is used, which is the case in the summer, the water will never be hot.

The feed pipe is ¾-inch and ½-inch, and the hot water supply is one-inch pipe; the furnace coil is ⅜-inch, while the lead pipe to the water front is one inch. The range boiler has a capacity of 40 gallons.

At the sink I am not able to get any results whatever, unless I work both fires to the limit.

Can you tell what I am to do to keep both fires connected and get better results?

Middleton, Wis. H. E. J.

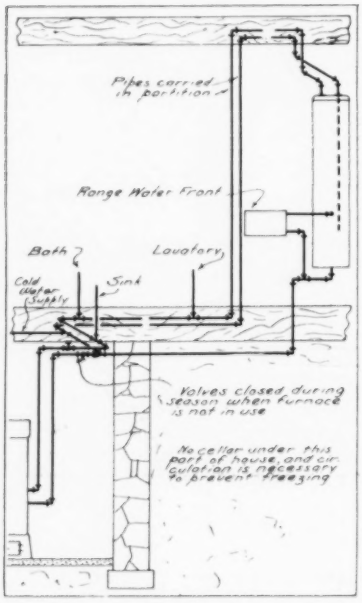

Pipes carried in partition
Range Water Front
Bath
Lavatory
Cold Water Supply
Sink
Valves closed during season when furnace is not in use
No cellar under this part of house, and circulation is necessary to prevent freezing

Fig. 1.

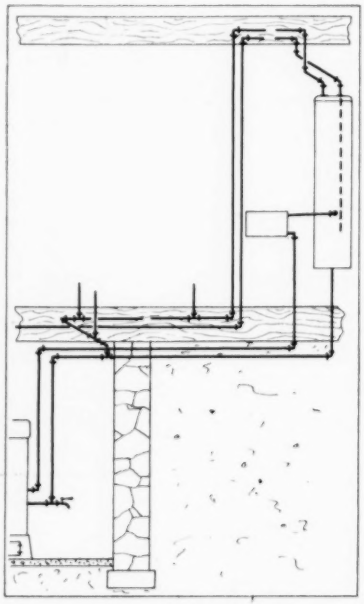


Fig. 2.

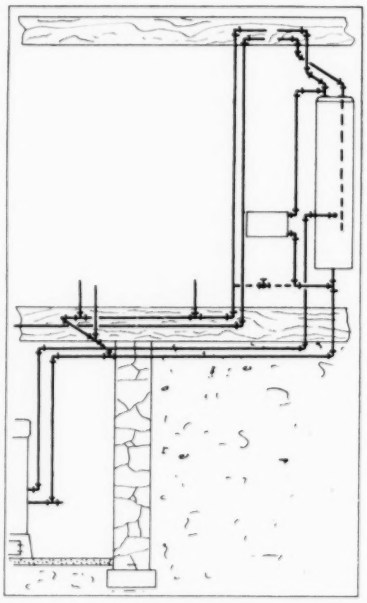


Fig. 3.

There are several things about correspondent's connections, as shown in Fig. 1, which we do not like, and we do not wonder that the results obtained are most unsatisfactory.

The flow pipe from water front to boiler apparently has no pitch, and it might easily be that it pitched in the wrong direction. We think the boiler supply should be connected differently, and that the flow pipe from heater to boiler can be connected to better advantage. These several improvements are shown in Fig. 2. As the flow pipe from the heater is connected in Fig. 1, it may be possible that the hot water becomes air-bound above the boiler.

It will be noted that in Fig. 2 the hot water from both heater and water front is delivered to the boiler before it is carried to the fixtures, and this will generally be found much more satisfactory than the method adopted in Fig. 1.

In one of correspondent's notes on Fig. 1, it would seem as if he considered that his job was provided with circulation. It is not, however. In Fig. 2 we have shown a circulating connection back into the return.

Apparently he wishes to circulate the job with the idea that this will keep the pipe from freezing, where it passes through the unexcavated part. We think that if he will carry the flow pipe from heater through this part, covering it to hold the heat, the return pipe will be sufficiently warmed if close to the flow, to prevent freezing.

The circuit connection between the heater and range in Fig. 2, will work very satisfactorily, whether one or both are in operation.

It may be, however, that he would prefer the connections shown in Fig. 3, the heater flow pipe entering the side, and the range flow entering the top of the boiler. The latter connection will allow hot water to be delivered in summer time without having to heat up the whole boiler before it runs hot.

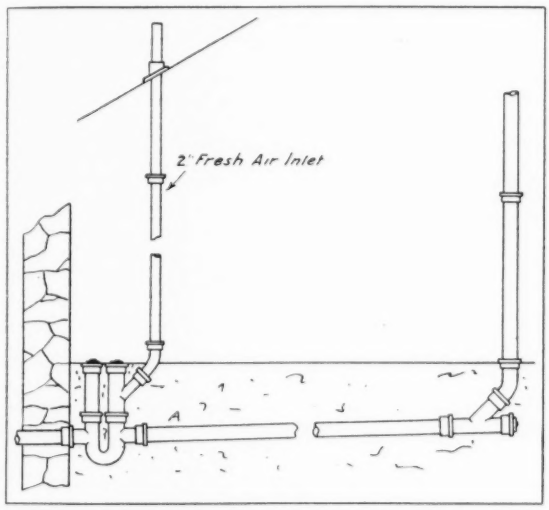
In Fig. 3 we show by a broken line, a return or circulating connection above the floor. Our idea is that when only the range is in operation, it may be difficult to raise the water through the regular circulating pipe, back into the boiler, thus making the circulation very sluggish. If this were so, a valve could be used to close off the regular circulating pipe in the summer time, the valve above the floor being opened. The latter valve would, of course, be closed when the furnace is in operation.

We believe these pointers and illustrations will help correspondent out of his trouble..

FRESH AIR INLET THROUGH ROOF.

Editor "Domestic Engineerng":—The illustration of traps shown in the September 27th issue of your journal reminded me of conditions in this town, about which I would like to ask you a question.

Brigham City is located in the Box Elder Canyon, very close to the mountains, and it has a natural drainage to the west. The ground consists of loose gravel to a depth of 100 feet, consequently we have no sewerage system here, but every dwelling has its cesspool.



Fresh Air Inlet Through Roof.

We vent all fixtures, and the sketch shows how we install a two-inch fresh-air inlet. Is this necessary under the conditions described?

Brigham City, Utah. M. B.

In accompanying illustration, we show correspondent's sketch. The only criticism we have to make concerns the size and method of running the fresh air inlet.

Correspondent asks whether a fresh air inlet is necessary under the conditions named. We presume the condition referred to is the use of cesspools rather than a system of sewers.

We do not think this should make any difference in the use of the main trap. Pressure and foul odors and gases are generated in cesspools as well as in sewers, and the main trap is used to guard the house against these evils.

It is only fair to say, however, that there are two opposite opinions as to the main trap. There is strong backing for the main trap, and equally strong influence against it, those who are opposed to it claiming that greater benefit is derived in not using the trap, thus allowing the sewer or cesspool to be vented through the soil and waste stacks of the house. If a main trap is to be used, however, it should be provided with a fresh air inlet and for a four-inch trap, as we presume this one of correspondent's to be, the fresh air inlet should be four, rather than, two-inch. This pipe not only brings into the system a supply of fresh air, but also relieves possibility of air-lock between the seal of the main trap, and a column of sewage flowing down the house drain.

The carrying of the fresh air inlet through the roof is a practice not commonly in use, but we do not see why it should not be acceptable, although we would suppose that it would often call for more pipe than the fresh air inlet as ordinarily installed.

The best connection for it is off a tee or Y, just inside the trap, at the point A. The advantage of such a connection over the one shown, is that cold air is brought less directly upon the seal, and the danger of freezing thereby lessened.

If it is allowable under the plumbing ordinance, to run a 2-in. fresh-air inlet, we would certainly advise increasing to 4-in. through the roof, as the 2-in. pipe will close up with frost during extreme cold weather.

USE OF AIR PIPE CONNECTED INTO OVERFLOW FROM EXPANSION TANK.

Editor "Domestic Engineering":—The accompanying sketch shows the cellar plan for a hot water job, which is to be installed in a four-story building in this city. There is a drop of 28 inches in the ceiling joist at arrow marks on sketch, and the architect has specified that the return shall run under the floor and drop the flow at this point. It is something new to me, and I would like to know, if it will work.

New Castle, Pa. G. B. P.

This is one of those cases where personal inspection of the conditions as they actually exist, might reveal a way of escape from the necessity of dropping the hot water

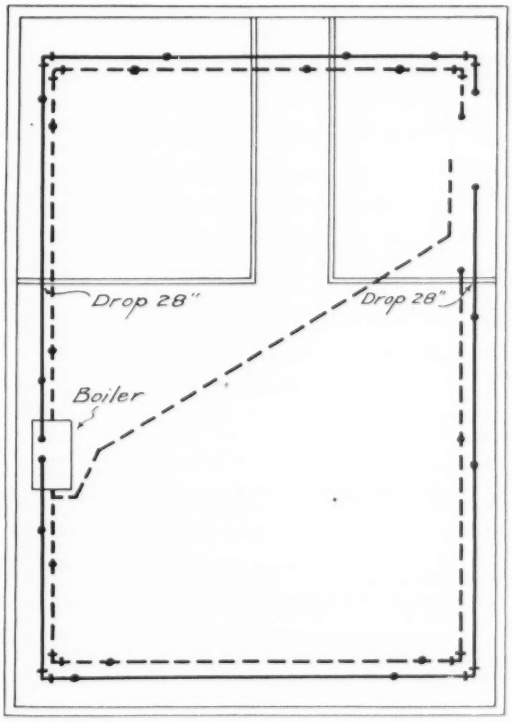


Fig. 1.

main around the beam that stands in the way. The heating system in question is seen in Fig. 1.

It might be that some type of boiler is low enough to allow the main to run below the obstruction; or it might be possible to set the boiler below the cellar bottom a sufficient distance to accomplish this result.

It might be found that the main could be run through

the beam, the necessary hole being cut at such a point that we do not believe the beam would be weakened.

If all of these expedients are out of the question, however, and it is absolutely necessary to make the drop mentioned by correspondent, we would suggest the remedy shown in Fig. 2. A small pipe, ½ in. or ¾ in., connected

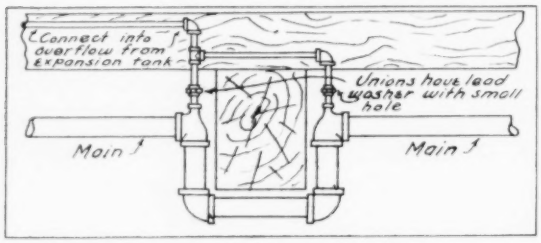


Fig. 2.

to both high joints, should connect to the overflow from the expansion tank.

On each of these pipes a union should be used, having a lead washer in place of the common washer, the lead washer having a small hole, perhaps ¼ in., which would allow the air to escape, without allowing much hot water to circulate through the small pipe. We are not absolutely sure that this will remedy the difficulty, but are strongly inclined to think that it will.

AIR EXPANSION PIPE NECESSARY.

Editor "Domestic Engineering":—The accompanying sketch shows part of the interior of a house, in which I am to install a radiator in the room indicated. Will you kindly explain the best method of installing the

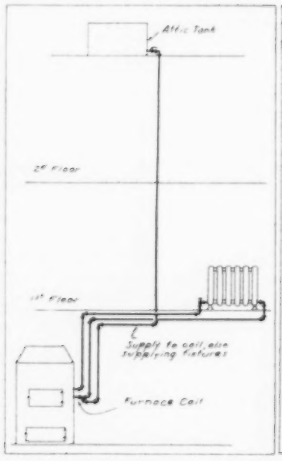


Fig. 1.

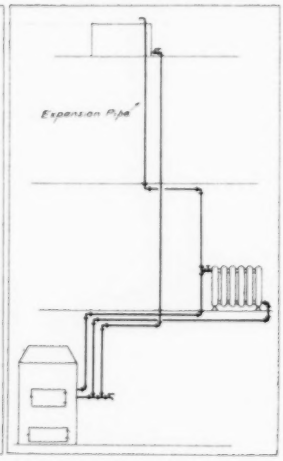


Fig. 2.

piping for this radiator? I would also like to know, if I can use the attic tank as an expansion tank.

Peotone, Ill. H. A. B.

We show the connections submitted by correspondent, in Fig. 1.

In Fig. 2 we show connections for this job, as we think it should be installed. The attic tank may be used as an expansion tank.

With the radiator supplied at the top, as we show it in Fig. 2, the air will vent itself through the expansion pipe.

A NOVEL AND SATISFACTORY HEATING JOB.

Editor "Domestic Engineering":—The writer has heard so many different opinions among local heating men as to the best method of installing overhead hot water heating systems, where the boiler is set on the same level or even

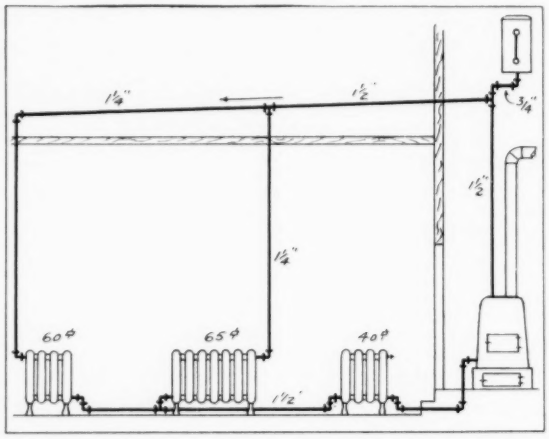


Fig. 1.

higher than the radiators, that I thought the accompanying sketch might be interesting to some of your readers.

While on a recent trip to one of our nearby towns, I ran across a small plumbing shop that was heated as shown in the accompanying rough sketch of the plant, and installed by the owner. There was no basement under the building and the rear of the shop was about two feet higher than the office section. He set up a small tank heater in the back shop and ran the main from this along the top of a partition in the office. The highest point in the system was at the top of the riser from the boiler, and he had pitched the main downward from this point. The expansion tank was taken off at the highest point also, thus keeping the system free from air at all times, so

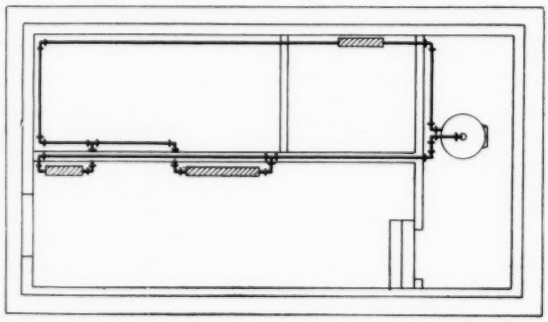


Fig. 2.

there was no need of air valves on the radiators, except one in his private office, which had no direct feed connection. He had simply connected this on the return from the other radiators, and, of course, would need an air relief. This radiator seemed nearly as hot as either of the others even without a direct feed from the main.

St. Faul, Minn. J. H. Morgan.

In Figs. 1 and 2 we show the elevation and plan of the small heating job that correspondent has described, and we wish to thank him for submitting this material.

The success of the work comes from elevating the flow pipe, and the higher this runs, the better the results will be.

The radiator on such a system should be fed as Fig. 1 shows them, into the top at one end, with return out of the bottom of the opposite end. This allows all air to escape through the expansion tank. As the 40-ft. radiator is not thus connected, an air valve must be used.

CONTINUOUS VENTING VS. CROWN VENTING.

Editor "Domestic Engineering":—What is best, continuous venting or crown venting? I wish you would illustrate both systems in an early issue, and describe their good points.

Marshalltown, Iowa. Subscriber.

In answer to "Subscriber's" question, we have no hesitancy in declaring emphatically in favor of continuous venting. In Fig. 1 we give an illustration of both crown and continuous venting. In crown venting, as "Subscriber" doubtless well knows, there is abundant opportunity for a collection of grease, hair, lint, etc. to collect at the point where the vent opens into the trap. The location of the vent opening is very favorable to this result, and so common is it, that we do not hesitate to say that in a large majority of instances, the crown vent after being in use for a time, will be found on examination to be either entirely or partially closed.

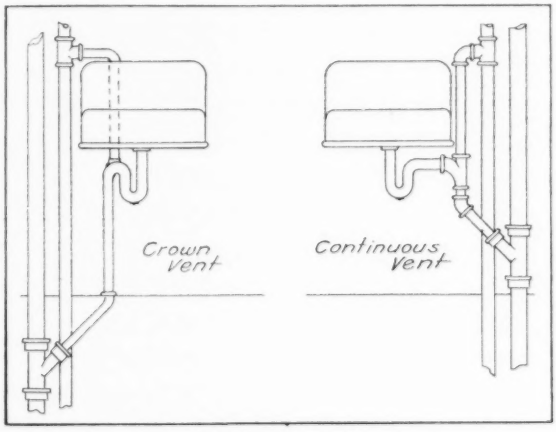


Fig. 1.

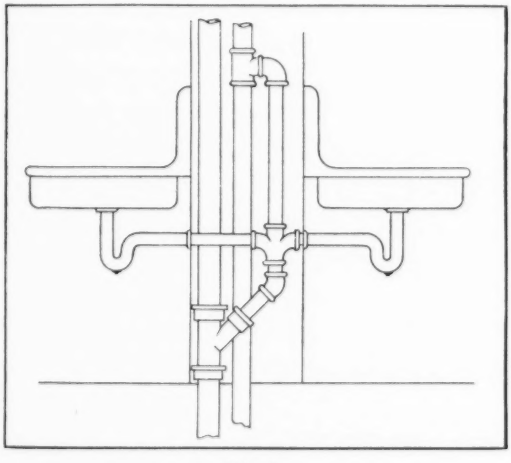


Fig. 2.

When this thing has taken place, the trap might as will be unvented, as far as the action of the vent in preventing siphonage is concerned. To make matters worse, trouble of this kind is seldom remedied for the reason that it is of such a nature and so located, that its existence is not known.

In continuous venting, however, especially in the use of the numerous special continuous vent fittings, there is much less possibility that such a stoppage will result. In the first place the continuous vent is generally much farther from the crown of the trap than the crown vent, and the vent opening located where there is less splash and whirl to the waste. Furthermore, in continuous venting the vent opening is generally larger in size, and therefore less easily filled.

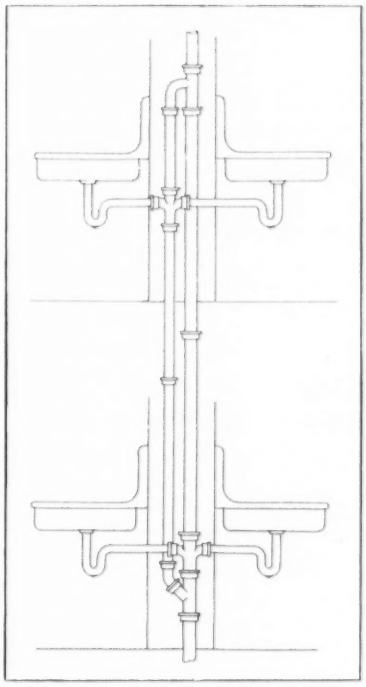


Fig. 3.

There is also very often a great saving in material and in labor, in the construction of continuous vents. This fact is shown in Fig. 2, where the same vent and waste fitting serve two fixtures. It can readily be seen that if these two traps were provided with crown vents, the expense of the work would be considerably greater.

The same advantages gained in Fig. 2 can be obtained where two lines of fixtures back up to each other, on opposite sides of a partition.

In Fig. 3 we show continuous venting of a special nature, that can be applied only where a stack serves fixtures on two floors only. The saving in this case is considerable.

We will be glad to publish all news furnished by secretaries of plumbers' and steam-fitters' associations. We want you to feel that "Domestic Engineering" is your personal medium of intercommunication.

Water—Its Properties and Practical Uses

XV.—A Study of Design in Plumbing Fixtures, Including Both Tubs, Lavatories and Laundry Trays—Some of the Accepted Styles

By F. W. TOWER

Baths.

IN modern house building the bath room is a most important factor: its arrangement, and the condition in which it is kept.

Bathing is almost as much a pleasant relaxation as a hygienic precaution, and attractive surroundings are essential to the comforts of the bath room.

The modern porcelain plumbing fixtures, tile floor and wainscoting, especially when colored tile designs are used, are in themselves decorative.

Pure white is considered most appropriate, also suggestive of the operating room.

Colored tiling is equally sanitary, and contrasts agreeably with the pure whiteness of the porcelain tub and other fixtures.

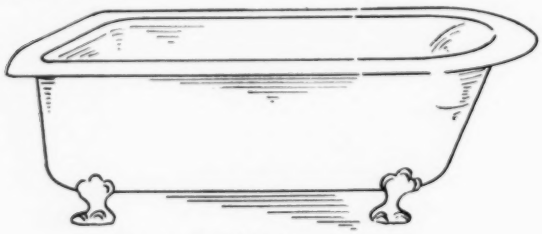


Fig. 1. French Pattern Bath Tub.

Baths were long used in oriental countries, and originally traveled by the route of Egypt to Greece.

From Greece they reached Rome, imported, as it is said by Agrippa, about 30 B. C.

The thermae, or hot baths, were of great splendor, and the erection of baths was one of the principal means by which many of the emperors tried to obtain fame and popularity.

These baths were heated by stoves, and were arranged to afford three different kinds of baths—cold, tepid and warm—as the bather preferred.

For about half a cent any Roman citizen could procure a bath, which were available for both rich and poor.

The word "bath" is applied to any artificial apparatus in which the whole, or a part, of the person may be washed, or to supply the place of a bath, as a shower bath.

The "plunge" bath comes in two standard shapes—the French and Roman.

The French style, Fig. 1, slopes at one end only, while the Roman shape, Fig. 2, slopes at both ends, with supplies at the back of the tub, instead of at the end as with the French type.

The solid porcelain tub, "vitreous ware," moulded and glazed with as much care as that given to the best quality of table ware, is regarded as the ideal in bath tub manufacture.

The cast iron tub, with porcelain enamel finish and roll rim, is the best known development of the iron tub.

The making of the solid porcelain, or "vitreous ware," baths, is attended with some uncertainty in the quality of the product. Cracks, warps or blisters may appear during the process of firing, resulting a grading that classifies as A, B or C quality.

Grade A indicates a perfect article.

Grade B, a very slight defect, and C, any other that is fit for use.

A great difference in price is made on account of the slightest defects.

The regular plunge baths are made from 4½ ft. to 6 ft. in length, in both French and Roman types.

A short deep tub is considered preferable to a long and shallow one.

A short tub gives a greater depth of water for the number of gallons used.

The ordinary tub is not suited to bathing the feet alone, and the foot bath is a very desirable fixture in the bath room.

The foot bath is made of either cast iron enameled or solid vitreous ware.

It is usually about 26 in. long, 21 in. wide and 15 in. deep.

The sitz or seat bath is usually 30 in. long, 27 in. wide and 21 in. high at the back, and 13 in. at the front.

These are also made in either cast iron enameled or solid porcelain.

A nursery bath, on a pedestal, is also now used in hospitals, and is about 31 in. high.

Spray or shower combinations are attached to the regular plunge baths, but a more satisfactory tub is the receptor of porcelain.

These are usually 3 ft. 6 in. square or round, 9 in. high, 6 in. deep inside, with a 2½ in. roll rim, and are very hygienic.

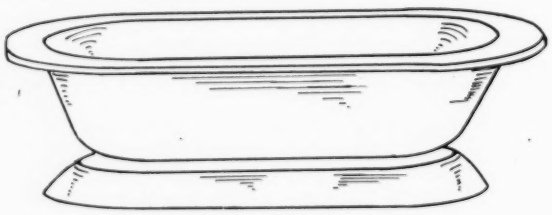


Fig. 2. Roman Pattern Bath Tub.

The shower frame is set about 7 ft. 6 in. high, has a curtain, and the outlet is usually 3 in., with a large strainer, thus giving ample capacity for all waste.

The plunge, foot or seat baths are connected in the same general manner, with both hot and cold water supplies, and suitable waste outlets.

Spray and shower bath supplies should be provided with a mixing chamber, enlarged for a thermometer, the bulb of which must be located in the center of the current.

Rain baths are one kind of a shower bath, especially adapted for public bathing places, and have the advantage over plunge baths for such places in that they occupy but little floor space and are thoroughly hygienic, as the same water is never twice in contact with the bather's body.

The difference between shower and rain baths is, that a shower falls in large drops at low velocity, while the rain shower comes in minute jets at high velocity.

The great objection to plunge baths is that skin diseases are apt to be transmitted from one bather to another, unless the bath is thoroughly scrubbed clean after each bath.

For this reason plunge baths are objectionable for public use, although safe for family use.

The chief merit of the shower bath is, that excretions or scales from the bather's skin cannot possibly come in contact with another.

In a tub, or plunge bath, the water is cleanest when bathing is commenced, and when clean water is most required, at the finish of the bath, the water is most foul.

In a rain bath the water is clean at all times, as it is continually changing, and none of the water comes in contact with the person more than once.

Bath tubs should be supplied through large pipes to avoid long waits.

Ample diameter and pressure is desirable for a shower, as the public shower may be used simultaneously by many persons, as in a gymnasium, for instance.

The simplest method of getting the hot and cold water to the tub is through separate faucets, but a combination faucet with a mixing chamber is often of great advantage, because a rose spray sprinkler may be adjusted, thus allowing a shower effect as well as a plunge.

Large outlets and overflows for tubs should be provided to empty rapidly and scour thoroughly, also to convey all surplus water, whether caused by excessive water pressure or by the sudden entrance to the bath by the bather.

The trap should be placed away from beneath the tub, to be easily accessible for opening or cleansing.

When the trap is to be "back vented," avoid running the vent pipe in a horizontal position, as the vent will fill with filth, thus quickly filling all air space and making it useless after chokage.

This vent should be perpendicular to a point above where it is possible to fill with waste, or above the overflow point of the fixture.

When the vent is vertical, whatever rises in the vent eventually falls back into the waste by its own weight.

For cleanliness, the shower is the ideal form for bathing.

Every drop of water that touches the skin is fresh and clean, much better than the plunge bath, as the water flows for immediate use, without the delay necessary for filling a bath tub.

The rapid recognition in recent years of the health giving and invigorating benefits of shower baths has resulted in a great increase in their use.

For the private bath room when a marble, tile or slate stall is not practicable, the shower receptor, with curtains, makes a convenient and very satisfactory enclosure.

These later bath patterns, so nicely and inexpensively equipped, leave little to be desired, even by the most fastidious.

Lavatories.

Basins for the hands and face are now made in one complete fixture, combining bowl, back and slab, thus being very cleanly.

They should be set up open, all pipes exposed, which allows free circulation of air, promotes cleanliness, allows leaks to be readily observed and repaired, while the open appearance ensures better workmanship.

The usual height a basin should be set is 28 in. from the floor.

Lavatories should be set near windows, in a position convenient to place a mirror over them, and so arranged that they may get light from both sides.

The pedestal lavatories, as also those designed to be supported on wall brackets, are made to meet almost all conditions liable to be required in building construction.

Porcelain, or vitrified china ware lavatories, are made of fire clay and covered with a white glaze, and at certain stages of their construction are in a plastic state, and to harden must be, or are, subjected to a very high degree of heat.

These are non-absorbent, will not craze, stain or discolor, and are easily kept clean.

It is almost impossible to secure absolute uniformity in shape and dimensions.

Slight blemishes, such as unequal glazing, surface specks and warping, is the result, and no article is absolutely perfect.

These slight imperfections in no way affect the service or durability of the fixture.

Pedestal lavatories should be set away from the wall, to allow space for cleaning.

The enameled iron basin with integral back and slab are quite cleanly, desirable and popular.

The concealed wall hanger should not be used in public toilet rooms, or where a lavatory is liable to get rough or hard usage, as all the strain is on the wall and will break away when improperly used.

Oval bowls are now in general use on all types of lavatories.

They employ the slab space to the best advantage, and are more convenient for use.

The overflow to a lavatory is the one hidden danger, as filth is liable to collect, and give off very unpleasant odors.

The overflow should be of ample size, easily cleaned, and readily accessible.

The greatest simplicity in waste devices should be considered.

A standing overflow that is easily removable may be used, as it is readily cleaned when necessary.

The chain and plug is a simple, effective attachment and extensively employed.

The rod or wire, with lever connection, allows a large overflow opening, and is easily removed for cleaning.

The siphon outlet allows a thorough scouring and cleansing effect through the waste by means of the overflow.

With the siphon pattern, the overflow and waste are so constructed that the discharge of the fixture scours the overflow as well as the waste, thus keeping both outlets regularly scoured and clean.

The siphon overflow is arranged to not only act as an overflow, but to empty the basin automatically each time the fixture is discharged.

The trap for the basin should be placed quite close to or connected with the outlet coupling.

The lavatory trap is more liable to siphon by the momentum of the water passing through it, due to its form, or funnel shape, than any other plumbing fixture.

This is shown by the "air cone" formed when the fixture is discharging, and the more cleanly the outlet and waste, the more is this noticed.

In a flat outlet fixture, such as a bath tub, some water is held back, as the level of the tub retains enough water to trickle into its trap and reseal it, but the lavatory is so shaped that no such effect is produced.

Special care should be used in the choice of a trap and its venting; the vent should extend vertically or an extension of the waste, with the trap entering horizontally on the continuous vent plan.

Basin cocks should be of a pattern that will not project much over the opening of the basin, in order to allow ample room for the laving of the face.

Lavatories are made to fit such a variety of conditions, and the makers have such complete lines illustrated, in all details, that their catalogues should be consulted for further information.

Laundry Trays.

Laundry trays, or a receptacle for washing clothing, should be of a non-absorbent material, as the fouled water would evaporate from the pores of any absorbent material during the intervals between washing days.

Therefore wood should never be considered, as the water soon saturates it, and after a few months' use it will be unclean, become permanently damp and is not a suitable material in which to wash table linen or wearing apparel.

Trays made of cement are frequently absorbent, due to the fact that the mixture is poorly made.

This material may become rough through the action of the water or from wear, and if this occurs it is unsuitable as a material for a laundry tub.

A non-absorbent material may be cleaned easily and no evaporation will take place from its surface.

Slate, soapstone, vitrified ware and porcelain tubs are non-absorbent, and these materials are extensively used in the manufacture of laundry tubs.

The porcelain enameled tray is white, perfectly smooth and no injury to the materials in the tub takes place.

The all-earthenware, or vitrified ware, is very heavy and expensive, but it is the ideal material for a wash tray.

The entire fixture is in one piece, integral back, moulded corners, perfectly smooth, non-absorbent, and being without joints has no place for germs or dirt to collect, as well as being very durable.

Slate and soapstone are also very heavy, and all trays when filled with water should have strong and firm supports.

Earthenware and porcelain tubs come separately and are connected either in sets as required, or as a single unit.

Wash trays installed in apartments should be provided with overflows.

Locate laundry tubs where there will be plenty of light, and if installed in exposed positions and the water supply pipes are liable to become frozen, shut-offs, easily accessible, and in a protected situation, should be placed to control the supply.

Within a few years a combination wash tray and kitchen sink has been placed upon the market, and in small apartments this type of fixture is often very desirable.

When the trays are not in use the cover may be used as the drainer for the sink.

The water supply should be ample, and the pipe diameter should be governed by the pressure.

Arrange the faucets at the rear corners of the tray to allow plenty of room to place clothing without tearing or bruising the head or hands.

The trap for this fixture should be preferably of a deeper seal and larger diameter than in the ordinary pattern.

This resists back pressure and evaporation much longer, and as this fixture is used much less than other fixtures, the larger type is considered much safer.

Threads or ravellings also get into this waste and cause siphonage by capillarity.

The height of wash trays from floor to the top of rim, on the regular standard, is usually from 32 in. to 36 in.

The wringer should be attached on the right-hand tray.

A NEW USE FOR LARGE IRON PIPE.

More Work for the Plumber and Fitter.

The method of transporting coal by water pressure through a pipe has been suggested by E. G. Bell, engineer for the Mammersmith Electricity Works of London. By this method from 30 to 60 tons of coal per hour can, it is claimed, be forced through an 8-in. pipe leading from the Thames and under Chancellors' Road to the yard of the power plant on Fulham Palace Road, a distance of 600 yards. If the scheme is adopted, a large mixing tank will be erected beside the wharf. The coal will be lifted from the barge by a mechanical grab, and after passing through an automatic weighing machine, it will be filtered into the mixing tank, which will contain approximately 15 per cent of coal and 85 per cent of water. A powerful electrically driven pump will then force the mixture of coal and water at high velocity through the transmission tube to a reception tank at the works. The coal will sink to the bottom of this tank and another pump will drive the water through a return pipe to the mixing tank. Another grab will lift the coal out of the reception tank into the storage yard. Although the initial cost of such a plant might be high, it is believed that it would eventually be a paying investment, since the present cost of transportation is approximately 14 cents per ton, or somewhat over $3,500 for the 25,000 tons which are used annually.

HOUSE COOLED BY AIR FROM DEEP WELL.

One of the most remarkable wells in Oklahoma is owned by J. C. McSpadden at Tahlequah, Okla. This well not only furnishes an abundance of pure water, almost ice cold in the summer time, but it affords a supply of chilled air, which is utilized for a cooling plant that keeps the McSpadden home cooler on the hottest day than any summer resort within a thousand miles.

It is a freak well in every respect. When the well was sunk it was for a cistern. When fifty feet deep the bottom broke through, revealing a cavern, in which there was a tremendous flow of ice-cold water. Apparently this is an inexhaustible supply, for the well was sunk years ago and the water has remained at the same level ever since.

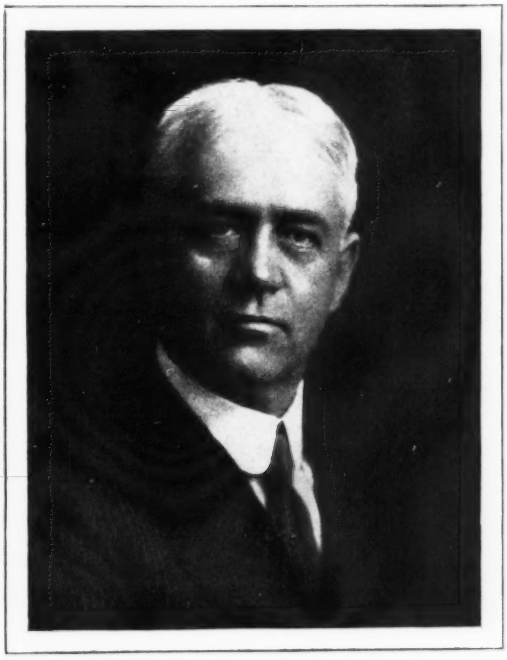
One may open the cover of this well and his hat will be lifted from his head by a rush of air from the well that feels like an icy blast. Where the water or the cold air comes from is a puzzle no one has answered. Unlike most underground streams, this one changes temperature in the winter, getting much colder. While the water stands forty-five feet below the surface of the ground, yet in winter ice five inches thick has been known to form in the well.

Taking advantage of the freak well's supply of cold air, Mr. McSpadden sealed the top of the well with a concrete cap and placed pipes in it. Through one of these he draws his water supply. Through the others he draws a supply of cold air that is piped through every room of his six-room cottage. These pipes reduce the temperature many degrees even on the hottest days, and when the weather is moderately cool the house can be made so cold as to be uncomfortable.

Little Sidelights on Men in the Trade

All Hail to "Our Loui!"

HE'S not an ordinary, but rather an extraordinary man. One who has battled his way upward from obscurity to prominence. He has by virtue of persistent effort, honorable methods and progressive ideas attained to a business prestige that has made him an esteemed and honored figure among his fellow-craftsmen in America.



S. Louis Barnes.

That's S. Louis Barnes of Philadelphia, vice-president of the National Association of Master Plumbers, and a member of the firm of Samuel W. Barnes & Son of the Quaker City. "Our Loui," as he is often called, possesses a vigorous and interesting personality, with no shadow of a stain upon his character. He is a man of large activity of mind and one who takes a wholesome delight in living, and who willingly bears big responsibilities each day with a calm good humor.

One of his hobbies is automobiling. Now and then he and his auto have a little falling out. He declares that automobiles act like some men at times—"they have a pesky way of doing just a little different from what they ought to do." Recently "Our Loui" acquired a new auto, and on one of his trips along the upper Wissahickon it took a sudden fancy to a dirt cart looming up ahead. Like a fellow with his sweetheart, it couldn't get close enough, and in the fond embrace that followed, both Barnes and the machine wound up unceremoniously in the ditch.

Louis said: "The car needed painting, anyway." We are mighty sure it did. His trouble now appears to be his gasoline tank. He confided to his friend Lentz the other day that it is just like pouring water into a rat hole; there's no end to it. As Harry knows all about automobiles, he suggested that the carburetor might have a tapeworm. So "Loui," after pouring in five gallons of gas producer, gleefully chug-chugged around town. "Isn't she running nice?" thought he—then the engine ceased. After carefully looking over the car's intestines, searching for the suggested tapeworm, someone remarked to the proud owner: "Look in your gasoline tank; it's dry as a bone." That carburetor certainly has all records for gasoline consumption beaten to a frazzle—we suggest the amputation of the offending member.

Mr. Barnes is said to be an extremely modest man. He's not given to "blowing his own horn" unless it be on New Year's Eve, when he might, of course, essay to blow a tin horn with the rest of the bunch bent on doing justice to the old year and welcoming the new. Men who have business of one sort or another with Barnes declare him to be one of the most courteous of gentlemen. Nothing is too much trouble for him. His beaming smile greets you whenever you enter his office door, and at once you feel a spirit of welcome that radiates warmth and good will.

When asked by the "Domestic Engineering" representative for some facts about himself, Mr. Barnes' laughing reply was: "Coarse and vulgar in appearance and manner, grouchy and repellant in his intercourse," and other remarks which fit him about as well as a 6 in. Trimo fits a 12 in. line.

S. Louis Barnes is known throughout the United States among master plumbers as a loyal-to-the-core Association man, a good comrade, a friend in need, and a man of sterling integrity. He has taken an active interest in association work for twenty years or more, and has frequently been honored by local, state and national associations. He attended the birth of the Pennsylvania State Association and was largely instrumental in building up that organization, devoting his time freely to the task. He was appointed a member of the National Board of Directors, under President Fee, and at the last National Convention at Philadelphia he was unanimously elected Vice-President of the National Association.

His newly assumed burdens appear to rest lightly on his able shoulders. He is never too busy to lend his ear to a fellow member and is always ready to give the glad hand and sound advice to those in need of his excellent counsel. No man who witnessed the tremendous ovation given Mr. Barnes at the thirty-first National Convention when he was escorted to the platform after his election to the vice-presidency of the National Association, will ever forget the occasion. The high esteem in which Mr. Barnes is held was clearly shown by the tremendous outburst of applause which brought tears of emotion not only to the eyes of his beloved parents, but to many other eyes in the audience. This hearty ovation proved to be too much even for "Our Loui," for on reaching the platform he swallowed hard, and with the words, "Gentlemen, you have me going"—had to conclude his remarks. It was a great occasion, and one that will live long in the memory of the delegates.

Mr. Barnes received his rudimentary education as a boy in the Philadelphia grammar schools, later attending a boys' evening high school, where he took up the study of higher mathematics. Later he enrolled in an evening trade school, taking a course in plumbing. He afterward

attended a school known as the Spring Garden Institute for a period of two years, acquiring knowledge in mechanical drawing. He wound up his education by a course in a business college, learning bookkeeping, business forms and customs, etc.

Leaving school he served a five-year term as an apprentice in his father's plumbing shop, afterward working as a journeyman, and later being taken into partnership with his father under the firm name of Samuel W. Barnes & Son. For a number of years he has practically taken entire charge of the business. The Barnes firm has been very successful and has ever maintained an enviable reputation for good work and honorable business methods.

Mr. Barnes' ability in handling men is well illustrated by the fact that among the force of mechanics employed by him are quite a few who have been with the firm for over twenty years and one man whose years of service exceeds thirty.

THE NEW VENTILATION.

The Lancet of London in its current issue contains an article by James Keith, a leading authority on ventilation, describing new methods introduced coincidentally with what Mr. Keith calls the "epochmaking" address delivered last year before the British Association by Dr. Leonard Hill, President of the Section of Physiology. Dr. Hill asked the consideration of nothing higher than a stuffy room. He said that the popular mind, supported by all the elementary textbooks of hygiene and most standard works, is imbued with the idea that ventilation is a question merely of chemical purity of the air, whereas chemical purity is the last thing to consider and is practically negligible. Dr. Hill later asserted that there was continually more oxygen in a closely packed room with all the doors and windows shut than in an equal space of rarified air in certain celebrated mountain resorts. It is a matter of scientific proof, which Dr. Hill cheerfully submitted, that there is danger of bacteria in the crowded room from the exhalations of many lungs, while its heat and the windlessness of the atmosphere are most to be dreaded. Indeed, if the air breathed by the crowd were perfectly pure the room would not, in Dr. Hill's view, be at all well ventilated until it were cooled and set in motion.

The cooling and vigorous circulation of the air we breathe constitute the essential problem of ventilating engineers. The Smithsonian Institute has lately published a study by Dr. Hill, Martin Flack, James McIntosh, R. A. Rowlands and H. B. Walker, from the physiological laboratory of the London Hospital Medical College, which shows that the chief fault of modern ventilation systems lies in their failure to keep the air moving. Therein is the virtue of open-air schools and of living out of doors, that the air is changed, and acts constantly upon the skin to stimulate the circulation and free the lungs. Mr. Keith's Lancet article is accompanied with illustrations of mechanical devices lately installed in New York's newest skyscrapers and in the engine rooms and stoke-holds of the newest ocean liners, which supply thousands of cubic feet of fresh "live" air every hour without discomfort from draught, besides a number of devices for ventilating offices, living-rooms, cabins and sleeping cars. With respect to the new ventilation in factories, Mr. Keith makes this observation of interest to owners:

"It may be added that not only does good and healthy ventilation on the lines indicated tend toward increased efficiency, health and happiness in the workers in crowded and overheated inclosures, but an immense saving per annum may be effected in the wear and tear of machinery and in lubricants by the reduction of the atmospheric temperature in sultry and often almost 'tropical' engine rooms, etc., to a more natural, normal and less 'vicious' degree; so that better or more nearly perfect ventilation is really, after all, a paying proposition."

Incidentally, by this constant change of air, emphasized in the new system, chemical purity is practically attained. But the difference between the new and the old systems is marked, in that the new scheme includes the regulation of temperature to a requisite moisture and coolness, and the all-important feature of rapid displacement. It is, says the "New York Times," an article that should be consulted by the experts in this country and by capitalists and public men who contemplate the installation of ventilating plants.

ERROR IN NUMBERING DRAWINGS.

Editor "Domestic Engineering":—Since writing my other letter I looked over a recent issue and saw your article about the ventings of traps in Figs. 1 and 2 in answer to E. B.'s question. I wish you would explain exactly why Fig. 2 is better than Fig. 1. I fail to see why the drum trap is not vented through the waste of another fixture to a greater extent than in Fig. 1, which has a clear vent pipe between the trap (drum) and the vent stack, while in Fig. 2 it must go up through the lavatory waste which may have a discharge of waste at the same time that the bath may be discharging. The second pipe in Fig. 1 may be unnecessary but I fail to see any reason for its having the vent of the drum.

Milton, N. Y. H. H. H.

The work to which correspondent refers, will be found on page 310 of the June 14th number of "Domestic Engineering." Correspondent is perfectly correct in his remarks, and in answer we have to say that through an error of the printer the numbering of our two sketches has become reversed. Fig. 1 should be Fig. 2, and vice versa.

Correspondent will see that if this were done, our answer would agree with the illustrations, which it does not now do, and that the connection which he makes, would then be upheld.

VILLAGE IMPROVEMENTS.

T. E. O'Brien, A. G. O'Neill and their families have returned from an automobile tour of the lake country. The trip, made in Mr. O'Brien's car, was, from all reports, delightful, and not an accident was experienced to mar the pleasure of the outing. On the way home a stop was made at a little town in the northern part of Illinois, in Henry county, called Kewanee. Mr. O'Neill was born and reared in this place. Mr. O'Neill reports Kewanee as progressing rapidly, a new pole in front of "Chuck" Wilson's barber shop giving Second street quite a citified appearance.—From the "Leaderite," published by the Leader Iron Works, Decatur, Ill.

The public service department of Los Angeles is taking figures on 2,000 ft. of 14-in. riveted sheet steel pipe and for a large supply of lead and iron unions and corporation cocks.

AN APPEAL TO ARCHITECTS, CONSULTING ENGINEERS AND OTHERS.

Issued by the Master Steam and Hot Water Fitters' Association of the State of New York.—Reproduced from the "Official Bulletin."

The members of the Master Steam and Hot Water Fitters' Association of the State of New York feel that architects, engineers and owners of contemplated buildings should be made aware of the unsatisfactory conditions that now exist as the result of the practice of including the heating, ventilating and power plant equipments in the general building contract.

An Injustice.

Our trade has suffered greatly by this rather modern innovation, and it is the opinion of responsible heating contractors that some steps should be taken to correct this evil, feeling certain that if the architect, engineer or owner will deal direct with heating contractors they will obtain more satisfactory results, as they very naturally will ask for, and receive, estimates from contractors whom they know and consider responsible and qualified to do the work in a satisfactory manner, and whose guarantee would be of some value, and who would, in case of any defect developing in their apparatus after acceptance, be ready and willing to promptly correct such defect.

The general contractor very naturally awards the contract at the lowest obtainable figure, very often regardless of the responsibility or qualifications of the heating contractor.

He seldom, if ever, awards the contract to the heating contractor whose figure he used to win the contract. After the contract has been awarded to him, he starts in to get new figures, often stating, in his requests for new estimates, "We have been awarded the general contract," etc., etc., showing plainly he is not dealing in a fair manner with the parties who originally estimated for him and helped him to obtain the contract.

Capital Invested.

Our members have considerable capital invested, and have plants which are equipped for the work of getting out and installing the apparatus, and at large expense maintain draughting and engineering departments, which are necessary in the design and construction of heating and ventilating apparatus, as separate and distinct plans and specifications must be prepared.

Numbers of general contractors have only small offices, and no plant at all, and very limited capital; their operations are financed on the capital of the various sub-contractors, making payments only when compelled to do so. Much sharp practice is resorted to by them in making their contracts, and payments. They often pay by giving part cash and part notes without interest, whereas they receive all cash from the owner. Some make payments on the basis of 70 per cent to 80 per cent—they in all cases receive 85 per cent to 90 per cent.

Proof of the fact that some general contractors use the money belonging to the sub-contractors is shown by the financial statements of several general contractors who have failed recently. The assets were very small and liabilities very large.

General Contractors Classified.

Sub-contractors divide general contractors as follows:

Those who meet their obligations, whether the owner pays them or not.

Those who meet their obligations upon receipt of payments from the owner.

Those who receive payment from the owner and pay the sub-contractor only when compelled to do so.

Those who never pay at all.

Those who award the contract to the low bidder, whose estimate they received when estimating the work.

Those who ask for and receive estimates from which contracts are awarded, who then compel sub-contractors to re-figure work, before sub-letting.

It is admitted that general contractors whose financial or business reputation is doubtful are not likely to receive estimates from responsible heating contractors, they are compelled to receive estimates from, and award contracts to, irresponsible parties, from whom there can be no redress in case of any defects developing after installation of the apparatus.

Best Results Obtained.

When the owner or architect deals direct with the heating contractor, he will get a better apparatus, and also save money, as the general contractor must add his profit to the estimates received.

When additions or alterations to contract become necessary, considerable delay and confusion are caused by having to deal through a third party.

The owner is also insured against the liability of having liens placed on his building operations by the sub-contractor for non-payment by the general contractor.

The State of New York has found it an advantage to contract for heating, ventilating and power work separately from the general contract. There is a State law covering this subject known as "Chapter 514 of Laws of 1912."

A Fair Request.

We wish to deal with principals, with the assurance that we will get a square deal and that we will be paid at the proper time for our work.

FINANCIAL TROUBLES.

Frank A. Wendell, a plumber of Salem, Mass., has filed a petition in bankruptcy scheduling his liabilities at $8,863 and his assets at $5,348.

Cornelius J. Gleason, a plumber at 490 East 184th Street, New York City, has filed a petition in bankruptcy, with liabilities $3,444 and assets $478.

Harry Sleep, a steamfitter at 835 East 165th Street, New York City, has filed a voluntary petition in bankruptcy scheduling his liabilities at $4,522.81 and assets at $280.

Boducky & Co., Inc., dealers in plumbing specialties at 212 East 37th Street, New York City, have filed schedules in bankruptcy showing liabilities of $13,274 and assets estimated at $5,900.

The Peerless Plumbers Supply Co., of 4125 Third Avenue, New York City, has made an assignment scheduling liabilities of $5,157, with nominal assets of $6,799 and actual assets of $3,306.

William Crombie, transacting business as the City Plumbing and Heating Co., at Wichita, Kans., has filed a petition in bankruptcy showing liabilities amounting to $7,929.13 and assets $5,785.59.

Clarence McKibbon and George W. Page, of the plumbing firm of McKibbon & Page, at 144 Monroe Avenue, Rochester, N. Y., have filed a petition in bankruptcy, both as individuals and as co-partners. The firm's liabilities are $10,298.15 and the assets $5,235.34. Individually Mr. McKibbon's liabilities are scheduled at $655 and his assets at $670, Mr. Page's liabilities are $35 and his assets $280.

THE QUESTION OF OUTSIDE PLUMBING IN BALTIMORE AGAIN UNDER DISCUSSION.

Renewed efforts to have put through the City Council of Baltimore, Md., an ordinance permitting the installation of outside plumbing—vent, soil and waste pipes—on dwellings and other buildings, have aroused a strong spirit of opposition among Baltimore health authorities, physicians and a large number of real estate men. The first attempt to get the ordinance through the council was made last spring, when there was a decided wave of protest. The question was shelved on account of the summer recess, putting an end to the discussion for the time being. But now it has been brought up again and renewed efforts are being made to ensure its passage. The protest has been revived with double force, and many of the leading medical, sanitary and real estate authorities in the city are taking a hand in the matter. The Chief of the Bureau of Sanitary Engineering characterizes the effort to secure the passage of the ordinance as "the most foolish thing imaginable." He declares that "all sanitary engineers are agreed as to the advisability of placing soil, waste and vent pipes on the inside of the building. From the standpoint of health it is impossible to secure as effective ventilation when the pipes are on the outside as when they are on the inside. The soil pipe is intended to ventilate the sewer, an important factor, and this cannot be done as it should be unless the pipes are inside. The reason is that inside temperature is more equable and invariably warmer, so that there is no hindrance to the free passage of air. The vent pipes are frequently closed by hoar frost, and to avoid this there should be a regulation providing for larger diameter at the exits of the pipes, as is the custom in many cities. Not only is the question of health involved in the location of the pipes, but also one of convenience to the property owner and of compliance with the aesthetic sense in regard to appearance. The trouble with freezing pipes is eliminated when the plumbing is within, and, in addition to that, the looks of a community are greatly improved.

MASTER PLUMBERS ENJOY BANQUET AT VIRGINIA, MINN.

Twenty-five plumbers and representatives of plumbing supply houses attended the initial banquet held recently by the members of the Range Plumbing Association at the Ormonde hotel, Virginia, Minn. Thomas F. Lynch, of Eveleth, presided at the gathering and introduced the various speakers in a clever manner. Adam Schirmer, one of the Hibbing boosters, delivered an interesting address and invited the members of the association to attend the banquet to be given at Hibbing shortly after the first of the year. Alderman Michael Boylan gave an entertaining talk, while D. R. Black, P. R. Mork and W. H. Palmer were among the Duluth speakers. W. H. Farrell, an official of the Duluth Plumbers' Association, spoke on the work of his organization. H. McQuillan, a Minneapolis master plumber, was also one of the speakers of the evening.

R. H. Thomas, school clerk of Portland, Ore., is taking bids on heating, ventilating and plumbing in the Arlota manual training buildings.

The County Commissioners of Esmeralda County, Nevada, are figuring on the installation of an oil heating plant at the Court House at Goldfield, Nev.

Prospects in Iron and Steel Brighter.

There is no warrant for the pessimism felt in some quarters for the future of the iron and steel trade. The prospects are unusually bright. Of course there is nothing certain in a market; there is always a possible danger. In 1905 it was possible that the market would go to smash and that 1906 would be a bad year, but the probabilities were the other way, and they won. Today there is a possibility that 1914 will be a poor year, but the prospects are that it will be the best year, in point of pressure for material, that the trade has seen since 1906, and perhaps the best in the whole history of the trade.

Quotations are as follows:

No. 1 Northern Foundry, New York	$16.00 to $16.25
No. 2X Northern Foundry, New York	15.75 to 16.00
No. 2 Southern Foundry, Birmingham	11.50
No. 2 Southern Foundry, Cincinnati	14.75
No. 2 Northern Foundry, Chicago	15.00 to 15.25

Copper Market Nearly Stagnant.

The future of the copper market would seem to depend on what the developments in business will be in the next four or five weeks. Anyone who can predict this with certainty holds the key for what prices will be a month from today. Without a decided change in the present conditions, prices promise to go lower although the statistical position may for some time continue a closely balanced one between supply and demand. In the absence of business the market quotations may be noted as follows for October delivery:

Prime Lake, nominal	$16.50
Electrolytic	$16.15 to 16.25
Casting	16.00 to 16.12½

For November and December delivery quotations are as follows:

Prime Lake, nominal	$16.50
Electrolytic	$16.15 to 16.25
Casting	16.00 to 16.12½

Spelter Market Weak and Dull.

With continued indifference of buyers and apparent anxiety of sellers, the market in spelter is again easier with sellers at $5.20 f.o.b. East St. Louis, and indications that still lower prices will rule unless there is a marked improvement in consumers' orders. The foreign market is also lower. Five cents for spelter is now predicted by some of the trade, but it must be remembered that some of these same interests were talking 6 cents per pound not so very long ago. It is a peculiarity of the spelter market that when it moves at all it is invariably in a definite direction up or down.

The Lead Market Dull and Easy.

Business in lead continues stagnant with the market nominal at the Trust price of 4½ New York, but on Western deliveries the Trust equivalent is being shaded by independents and second hands for the limited business that is available, and another reduction in the Trust prices under the circumstances would not be a surprise to the trade. November and December lead has been offered at $4.30 E. St. Louis without finding buyers.

Contracts Awarded

Sterling, Ill.—John A. Loos, of this city, has secured the contract for the plumbing of the new county jail now being erected at Morrison, Ill.

Central City, Neb.—Bishop & Winthrop have secured the contract for the heating of the new high school building and the contract for the plumbing in the Ward school building in this city.

Ann Arbor, Mich.—Hutzel & Co. are installing plumbing and heating systems in a number of residences, and they also have secured the contract for the plumbing and heating in the Wahr Building on State Street.

Ann Arbor, Mich.—Sam C. Andres, of this city, has secured the contract for the plumbing and heating in the local Contagious Hospital, and he has just finished the plumbing and heating in the Seventh Ward school.

Central City, Neb.—Ross & Hart have secured the contract for the installation of an up-to-date plumbing system in the new high school building and the contract for the steam heating of the Ward school building, both in this city.

Omaha, Neb.—J. J. Hannegan Co., of this city, has secured the contract for the plumbing and heating of the Omaha Printing Co's. new six-story building to be erected at Thirteenth and Farnum Streets. This company also has a number of large contracts in hand in this city and its vicinity.

Bellevue, O.—Chas. H. Dawson, of this city, has secured the contract for the plumbing in the new school now being built here. Consideration $1,942. He also has secured the contract for the plumbing and heating in Joseph Diethrick's residence in this city, and the contract for the installation of a hot water heating plant in Father T. F. Quinn's residence at Clyde.

Lincoln, Neb.—George H. Wentz, of 311 South Eleventh Street, has been spending several months in Montana, supervising some large contracts, among them being the installation of plumbing and heating in the United States post office buildings at Livingston and Billings, Mont. During his absence his business is left in charge of his son. Mr. Wentz is president of the Nebraska Master Plumbers Association and has a host of friends in the trade, not only in Nebraska but also in the surrounding states.

Uniontown, Pa.—Harry L. Burd, of 8 South Gallatin Avenue, has secured the contract for the installation of a new plumbing system in the county jail, at his bid of $3,500. The entire system, which has been in use 23 years, will be removed. This old system was installed by Mr. Burd, who was at that time employed by John C. Fisher. Mr. Burd has recently completed the installation of up-to-date plumbing and heating systems in the West Penn. Traction Co's. terminal building in this city, a contract which amounted to $1,750.

The Board of Education, of Bakersfield, Cal., has placed a contract with the American Heating Co., for a heating plant in the H. F. Williams school building, at $5,986. The board has received peremptory orders from the Bakersfield Board of Health to place the toilet arrangements of the various school buildings in sanitary condition.

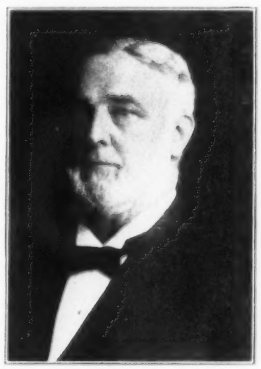
New Business Ventures

Hot Springs, Ark.—Cecil Ledgerwood and L. S. Williamson have formed a partnership under the firm name of Ledgerwood & Williamson, and have opened an up-to-date plumbing establishment at 144 Central Avenue. Both men are practical plumbers and well-known to the trade in this city.

Obituary

Dr. H. K. Beatty.

Dr. H. K. Beatty, chief of the Bureau of Sanitation, Pittsburgh, Pa., died at his home in that city on Monday, October 6th, after several months of illness. He was in his 62nd year, but was in his prime and very active until the early part of this year when his health began to fail. He did a good work in promoting sanitary construction of sewers and plumbing systems in Pittsburgh, and he had the confidence and esteem of the practical men in the trade. His interest in the progress of sanitation made him obtain membership in the American Society of Inspectors of Plumbing and Sanitary Engineers, in which he served as vice-president and as member of the board of directors with great efficiency. His many friends in all parts of the country will regret to receive the intelligence of his demise.



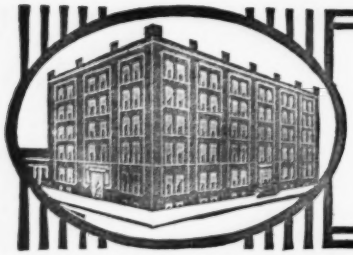
The Late Dr. H. K. Beatty.

Thomas H. Chipp.

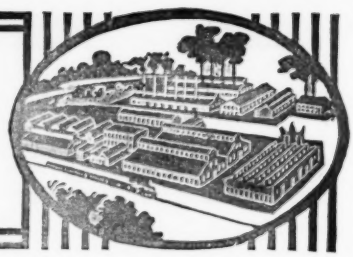
Thomas H. Chipp, for many years connected with the Criqui Plumbing Co., 19 Allen Street, Buffalo, N. Y., and since January this year sole proprietor of this business, died of pneumonia at his home in that city on Thursday, September 25th, in his 37th year. His wife, one daughter and his mother survive him.

M. Levy.

Michael Levy, a well-known and successful plumbing contractor at 1231 Sutter Street, San Francisco, Cal., died at his home in that city on Monday, October 6th, in his 41st year. He had been in poor health for the last few years, but was, until recently, able to give his active attention to business. He had a large circle of friends among the master plumbers in his city, who regret his early demise. He was born in Boston and went to San Francisco about twenty years ago. Two brothers, Philip and Louis, engaged in the electrical business in San Francisco, survive him.



Among the Wholesalers and Manufacturers



CHANGE OF DATE FOR THE FALL TOURNAMENT OF THE WESTERN TRADE GOLF ASSOCIATION.

Owing to the fact that the Central Supply Association will hold its annual meeting in Chicago on Wednesday, October 22nd, the Western Trade Golf Association has decided to hold its fall tournament on the next day, Thursday, October 23rd, to give out-of-town visitors a chance to participate in the event, which will take place on the links of the Calumet Country Club, at Burnside, Ill.

LAMBERTVILLE POTTERY CO. OPENS NEW YORK OFFICE.

The Lambertville Pottery Co., of Lambertville, N. J., announces that it has established an eastern sales office in the World Building, New York City. This will be under the direct supervision of Wm. F. Thompson, who will cover New York and the New England states. Mr. Thompson is familiarly known to the plumbing supply trade through his long association with Thos. G. Knight and the Colwell Lead Co., both in New York City.

E. C. B. JUDD, INCORPORATED, DECLARED BANKRUPT.

E. C. B. Judd, Incorporated, manufacturer of plumbers' woodwork, at Grand Rapids, Mich., was adjudged bankrupt on September 23rd, in the Western District court of Michigan, Southern Division. A notice has been issued to the effect that the first meeting of the creditors will be held at the office of Kirk E. Wicks, referee in bankruptcy, 212 Houseman Building, Grand Rapids, Mich., at ten o'clock a. m., October 22, 1913, at which time the creditors may attend, appoint a trustee and prove their claims and transact such other business as may properly come before such a meeting. Wm. F. Knight, of Grand Rapids, Mich., acted as attorney for the petitioning creditors.

W. C. MATLACK GIVES INFORMAL DINNER.

W. C. Matlack, of Trenton, N. J., was host at an informal dinner on Tuesday evening, October 7th, at the Hotel Astor, New York City. His guests were limited to those who had been associated with him in the Potteries Selling Co. After the dinner an enjoyable evening was spent at the theater. Following are those who participated: W. C. Matlack, of Trenton, N. J.; A. M. Maddock, jr., and H. S. Maddock, of Thomas Maddock's Sons Co., Trenton, N. J.; A. V. Conradt, of the Great Western Pottery Co., Kokomo, Ind., and Tiffin, Ohio; John A. Campbell and E. S. Aitken, president and sales manager, respectively, of the Trenton Potteries Co., Trenton, N. J.; W. B. Maddock, of John Maddock & Sons Co., Trenton, N. J.; Walter Lyons and Harry Lyons, of Trenton, N. J.; Col. Fred Dilkeson, of the Bellmark Pottery Co., Trenton, N. J., and Mr. Potts, of the Elizabeth Pottery Co., Elizabeth, N. J.

WILL ADDRESS CENTRAL SUPPLY ASSOCIATION.

J. Lawrence Laughlin, professor of economics in the University of Chicago, will address the nineteenth annual meeting of the Central Supply Association at 2 p. m., on Wednesday, October 22nd, at the Hotel Sherman, Chicago. His address will be on "Democracy in Business."

EASTERN SUPPLY ASSOCIATION'S ANNUAL MEETING.

The annual meeting of the Eastern Supply Association was held at the Astor Hotel, in New York City, on Wednesday, October 8th, with a good attendance. The election of officers for the ensuing year resulted as follows:

President, L. O. Koven, of L. O. Koven & Bro., 50 Cliff Street, New York City; first vice-president, W. L. Blake, of W. L. Blake & Co., Portland, Me.; second vice-president, G. R. Adams, of Samuel Sloan & Co., Rochester, N. Y.; treasurer, Martin Behner, of Behner & Co., New York City; secretary, Frank S. Hanley, 261 Broadway, New York City.

The board of directors will be composed of the following gentlemen: L. O. Koven, W. L. Blake, G. R. Adams, Martin Behrer; James F. Conran, of the Standard Sanitary Mfg. Co., New York City; Jos. F. Evans of the Wyoming Valley Supply & Mfg. Co., Wilkes-Barre, Pa.; James P. McPhail, of the Jas. Robertson Mfg. Co., Baltimore, Md.; John A. Murray, of John A. Murray & Co., New York City; F. T. Stevens, of the Plimpton & Hills Corporation, Hartford, Conn.; H. W. Thorndike, of the F. W. Webb Mfg. Co., Boston; A. A. Tomlinson, of the Virginia-Carolina Supply Co., Norfolk, Va.

The following gentlemen will serve as National Committee representatives: J. Walter Lyons, of the Keystone Pottery Co., Trenton, N. J.; H. B. Hallett, of the Eastern Range Boiler & Welding Co., Conshohocken, Pa.; F. W. Hubbard, of W. B. Hubbard & Sons Co., Boston; S. E. Hunting, of the Hunting Co., Watertown, N. Y.; Walter Walls, of the Walls, Owen & Stambach Co., Philadelphia.

P. M. Beecher, of the Pierce, Butler & Pierce Mfg. Co., of Syracuse, N. Y., was elected national councilor to the Chamber of Commerce of the United States.

The following concerns were elected members of the Association by a unanimous vote:

E. F. Butler, Boston, Mass.

Hogan Mfg. Co., Hartford, Conn.

Patterson-Kiser Seat Co., Greensboro, N. C.

The following resolutions were unanimously adopted:

"Whereas, The retiring president (P. M. Beecher), has rendered valued services to the Association and to the trade generally; and

"Whereas, We desire to manifest our appreciation and desire to make his knowledge and experience available to incoming officers,

"Therefore it is resolved, That the retiring president be made adviser to the board of directors.

"It is further resolved, That all future retiring presidents shall act in an advisory capacity to the board of directors.

"It is further resolved, That the said advisors shall have no vote in the board of directors."

WILL DEBATE ON HEATING AND VENTILATING.

Members of Illinois Chapter of American Society of Heating and Ventilating Engineers Plan Interesting Meetings.

Among the plans prepared for the monthly meetings of the Illinois Chapter of the A. S. of H. & V. E. is that of holding debates on various phases of heating and ventilation topics, the subjects to be chosen later.

The first meeting of the Illinois Chapter for the winter season was held at the Bismarck Cafe, Chicago, Monday evening, Oct. 13. Two dozen members sat down to a bounteous repast, which put them in good humor for the talks that followed.

President J. M. Stannard and Secretary W. L. Bronaugh presented their annual reports, and Mr. Hart reported for the treasurer, a balance of $418.98 being in the treasurer's hands.

S. R. Lewis reported for the ventilation commission. He stated that equipment had been installed at the Normal School which would provide for interesting experiments this winter. Air is to be brought into one room at 50 or 60 degrees, and thin sheets of air are to be blown in at points above and around windows.

President Stannard, in the absence of Chairman Capron, told briefly of the work of the educational joint committee which had conferred with a similar committee of the American District Heating Association.

Dr. E. Vernon Hill spoke of the need of an ordinance calling for the inspection of ventilating work in the city of Chicago along the lines of that covering plumbing. He told of recent experiences in enforcing the compulsory ventilation law as it applies to theaters. One theater at 43rd and Wabash Avenue was closed on Saturday and was reopened on Tuesday, the proprietor having secured a temporary injunction restraining the city health department from enforcing the law. The case is to be decided shortly. The law now calls for 1,200 cu. ft. of air per hour per person in old buildings and 1,500 in new structures. The theater owners do not so much object to furnishing the requisite amount of air as they do to heating it.

Tests of the air have been made in over 400 theaters. Of these, 168 are now equipped with mechanical ventilation. There are 618 theaters in Chicago.

Dr. Hill defended the present ordinance, stating that in order to secure adequate air supply it was necessary to have ample capacity, as many plants do not measure up to their rated capacity. Cleveland has the same ordinance as Chicago; Philadelphia requires 1,800 cu. ft., while New York is the only other city with a ventilating ordinance, the standard there being but 600 ft. The State of Michigan is to have a state wide ordinance identical with the Chicago ordinance, only more complete, if plans do not miscarry.

Chas. F. Newport and H. M. Hart talked on ways and means of interesting the public in the present ventilation ordinance, that the work of Drs. Young and Hill might be made more effective.

Election of Officers.

The election of officers resulted as follows:

President, Harry M. Hart, of L. H. Prentice Co., 328 South Sherman Street, Chicago.

Vice-President, Chas. F. Newport, of Ideal Heating Co., 6312 Wentworth Avenue, Chicago.

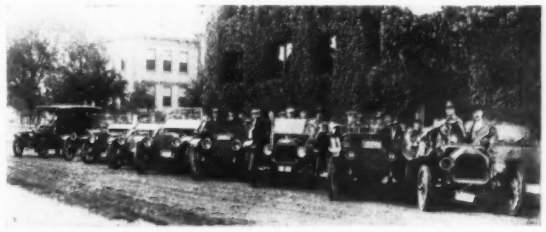
Secretary, W. L. Bronaugh, of Iroquois Engineering Co., Fisher Building, Chicago.

Treasurer, August Kehm, of Kehm Bros. Co., 15 West Kinzie Street, Chicago.

Board of Governors: J. M. Stannard, of Stannard Steam Specialty Co., Monadnock Block, Chicago, Samuel R. Lewis, of Lewis & Kitchen, Karpen Bldg., Chicago; Robert A. Widdicombe, of Wm. A. Pope, 5552 Lakewood Avenue, Chicago.

START OF THE STURTEVANT SEMI-ANNUAL OUTING.

The accompanying illustration is a reproduction of a photograph of the department heads and their assistants of the B. F. Sturtevant Co., of Hyde Park, Boston, ready



Department Heads of B. F. Sturtevant Co. Ready to Start for Their Semi-Annual Outing.

to start on their semi-annual outing, recently held near that city. This picture indicates a good get-together spirit in the administration of the company and its belief in co-operation between all departments for the best service to its customers as well as the good of the business.

ANNUAL DINNER OF THE UNITED BUNCH OF SHEEP IN NEW YORK CITY.

New York City had a large number of "sheep" on Saturday night, October 11th. Their wool had been carefully combed and, from their general appearance, one would have to admit that they had been well pastured. From far-away fields they came—from Jersey, even from Brooklyn, and with them came their "shepherds." But they had all sworn allegiance to one tribe, "The United Bunch of Sheep," New York fold. And on this night they gamboled like lambs oblivious for the time being of their pedigree and whence they came. "Bell Sheep" Gannon marshalled his scattering herd at the Astor theater early in the afternoon and there Cohan's amusing comedy, "Seven Keys to Baldpate," was witnessed. The play proved very digestible and, seemingly, only sharpened the appetites for the grazing that followed. This was in the form of a "Beef Steak" dinner and a portion of

Reisenweber's "pasture" was seized for the occasion. This was so well surrounded by high fences, however, that absolute privacy was secured, in spite of the fact that a trio of South African "gorillas" inspiringly sang and played throughout the evening.

Every sheep present was guarded by his "shepherd." Here they are: Mrs. and Mrs. Gannon, Mr. and Mrs. William Rothwell (American Pin Co.), Mr. and Mrs. Paul Schwab (Schwab Bros.), Mr. and Mrs. Wm. Schulmerich (L. O. Koven & Bro.), Wm. M. Murray and daughter, Mr. and Mrs. Henry Stein, Mrs. Williams, Mr. and Mrs. Arthur White (Blairsville Enamel Ware Co.), Mr. and Mrs. Albert Baerenklau and Mr. and Mrs. Henry G. Pokorny (Mayer, Lane & Co.).

H. MUELLER MFG. CO'S. TENTH ANNUAL COON HUNT.

The tenth annual coon hunt of the H. Mueller Manufacturing Co., of Decatur, Ill., was pulled on Saturday night, October 4th, at a point eight miles northeast of that city, on the heavily timbered lowlands of the Sangamon river. It was a great event and the big bunch of hunters had a rip-roaring time, which had been "unconditionally guaranteed" them before hand.

The guarantee was made good even to the catching of one coon and one possum. The coon led the dogs a long and merry chase and finally sought refuge in the upper-

Start of the Mueller Coon Hunt from the Factory of the H. Mueller Mfg. Co., Decatur, Ill.

most branches of a tall hickory tree, from which he was shaken by a climber. The crowd had formed a big circle around the waiting dogs and when the coon hit the ground the fun commenced. The little animal put up a terrific battle and when finally overcome by the dog, the latter knew that he had been in a fight with something more than an alley cat.

With the possum it was different. He simply played possum when the dogs overtook him and did it so successfully that he fooled the dogs, but he did not fool anyone else. The possum was bundled into a sack, and will later be the piece de resistance at a possum supper when the hunters hold a reunion.

The main body of coon hunters left the Mueller factory at 5:00 p. m. They were preceded by an advance guard which had supper ready when the hunters reached camp, and the feast received first attention. After that came the hunt, which lasted through the greater part of the night.

On this annual event members of the firm mingle with the men, and everybody is on equal footing from the president to the office boy.

Half a dozen farmers from the vicinity of Oakley went with the hunters and acted as guides. About 4:00 o'clock Sunday morning, a party of twenty hunters lost their bearings and wandered around till daylight before they found out where they were. When they got back to the camp they discovered that the other nimrods had returned to the city.

Following are the names of most of the men who participated in the hunt: George Adams, W. Potter, Ernest Maxey, Wilkins, Terry Stoner, Harry Hunt, B. Kitchen, T. Nolan, M. Yonker, Halmbacher, Gibson, Barber, Jake Bauer, Maleska, J. Young, Brown, W. W. Crane, W. Hill, Bennett, Armstrong, A. Black, B. Flory, Bert Whitsett, H. Cameron, D. Skelley, W. E. Pease, Bateson, Livingston, F. Cassell, Gus Wilmeth, B. Kazar, M. Henderson, Black, G. Stoy, F. Peebles, W. Simpson, L. Burley, W. T. Mason, Claude Riggin, W. O. Thompson, J. Hinton, Charley Lincoln, F. Rucker, C. Auer, L. E. Rambo, A. Harry, A. Mueller, R. Mueller, Fred Guyant, Ed Schlademan, W. Birchfield, I. E. Busher, H. Rogo, A. J. South, H. Hays, D. Talbot, Holt Slater, Vere Brownback, Z. Melhorn, W. E. Adams, W. H. Bachman, C. Bohon, W. H. Cadwallader, P. Mueller, O. W. Dawson, Dick Moore, M. Cobb and Will Post.

THE GROWTH OF THE SANITARY POTTERY INDUSTRY.

In twelve years, the production of sanitary pottery jumped from a comparatively small amount in 1901 of $2,877,650 to a new record in 1912 which totaled $7,902,255, or an increase in the value of production within the scope of a dozen years of $5,024,605.

No other item made of clay, with the possible exception of brick has experienced such a wonderful growth within so few years, and the greatest increase has been noted in two states, namely, New Jersey and West Virginia. And the end of the increase is not believed to have been attained.

In the production of sanitary pottery, New Jersey is, of course, the leading state, with a total sanitary ware production in 1912 valued at $5,199,278, an increase of $300,690 or 6.14 per cent over the production of the previous fiscal year. In fact the production of sanitary ware in this state was 65.79 per cent of the total production of sanitary ware in the United States for the twelve months.

In taking second position, West Virginia took a good jump in production, which was valued for the 1912 term at $1,156,478, an increase of $341,879 or 41.97 per cent over 1911. While the production of sanitary ware in the vicinity of Wheeling has increased most rapidly, new plants opened in the interior of the state tended to increase the value of the production in that district.

The State of Indiana is the third largest sanitary pottery producing state and last year its increased produc-

tion was valued at $84,108, or 15.31 per cent greater than its production for the previous year. As a total Indiana produced sanitary ware in 1912 valued at $549,599. Ohio was fourth in the list with a production of $378,779, and Pennsylvania took fifth honor with a production of $215,590. All the other states in the union had but a total production of sanitary ware valued at $174,432.

There are not as many plants manufacturing sanitary pottery as heretofore, there being four firms less engaged in the business in 1912 than 1911. Yet, the other plants have increased their kiln capacity, increased the production of their clay shops to such an extent, that notwithstanding there were some firms which went out of business, the production of sanitary ware in 1912 showed an increase of $870,797 over that of 1911.

When the production of sanitary ware reached the 5 million dollar mark, many manufacturers and buyers were of the opinion that the heighth of the industry had been attained. But not so. The general use of sanitary pottery continued to climb.

From 1901 to the end of 1912, the annual production of sanitary pottery is as follows:

1901	$2,877,650	1907	4,863,222
1902	3,555,662	1908	4,373,590
1903	3,362,263	1909	5,989,295
1904	3,585,375	1910	6,758,996
1905	4,580,145	1911	7,031,458
1906	5,098,310	1912	7,902,255

Making a total for these twelve years of $59,977,121.

E. W. Sanborn, assistant general sales manager of the United States Radiator Corporation, of Detroit, Mich., visited the Omaha branch of this concern last week.

W. L. Powers, of Decatur, Ill., one of the live-wires of the trade has recently taken charge of the Chicago office of the Ruud Manufacturing Co., of Pittsburgh.

Geo. Stannard has become identified with the Enterprise Brass Works, of Muskegon Heights, Mich., and the American Brass Novelty Co., of Grand Haven, Mich., as sole sales representative of their plumbing lines.

Geo. H. Reynolds, formerly secretary of the Chicago Master Steamfitters' Association, celebrated his fiftieth wedding anniversary on Thursday, October 16th, at his home, 1171 East 61st Street, Chicago. Both Mr. and Mrs. Reynolds were congratulated on the happy occasion by a large number of friends in the trade, who still remember the good work Mr. Reynolds performed for the benefit of the trade in general.

TABLES OF ESTIMATED RADIATION IN CONVENIENT FORM.

Harry B. Perrigo, of 106 Hobart Street, of New Haven, Conn., has just published an interesting and simple guide for heating contractors in figuring radiation, under the title of "Tables of Estimated Radiation for Steam and Hot Water." These tables are printed on celluloid plates, 4½x7 inches, a most convenient form, and calculated to withstand wear and tear; and they are gotten up in such a shape that anyone can understand them. Mr. Perrigo will be glad to send a copy of them postpaid to anyone anywhere in the world upon receipt of $1.

THE "PENNIE" BACK WATER VALVE.

The recent rainy weather has created a large demand for the "Pennie" back water valve, shown herewith, according to reports received from the manufacturers, the Kennedy Valve Mfg. Co., of Elmira, N. Y. The installation of this valve prevents the backing up of water into

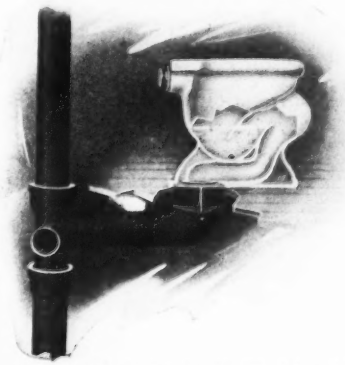
The Pennie Back Water Valve.

house drains, the flooding of cellars and the blocking up of sewers, which have caused so much damage and inconvenience following heavy rains in the large cities. Plumbers who are not posted on this valve can get full particulars from the manufacturers upon request, mentioning "Domestic Engineering."

NEW FITTING TO TAKE PLACE OF OLD LEAD BEND CONNECTION.

The law of the survival of the fittest applies with equal force to the human race and to plumbing specialties. Old fashioned plumbing devices are bound to be superseded by up-to-date inventions. A notable instance of this truth is the lead bend connection which is doomed to become as obsolete as enclosed plumbing, if the present rapid adoption of a new type of fitting may be taken as an indication of future conditions.

It is said that this fitting, which is known as the J-M Sanitary Closet Fitting, saves labor, time and money because it can be installed in less than half the time ordinarily required. And it never requires the slightest attention after installation, whereas the old fashioned lead bend oxidizes in a few years and goes to pieces.



New Closet Fitting Made by the H. W. Johns-Manville Co.

The "J-M" Fitting eliminates all lead connections under the floor and permits all the flexibility the plumber desires. The makers assert that it can be quickly screwed or calked into any stack and that, as it can be turned to any angle, it is very simple work to connect with any closet.

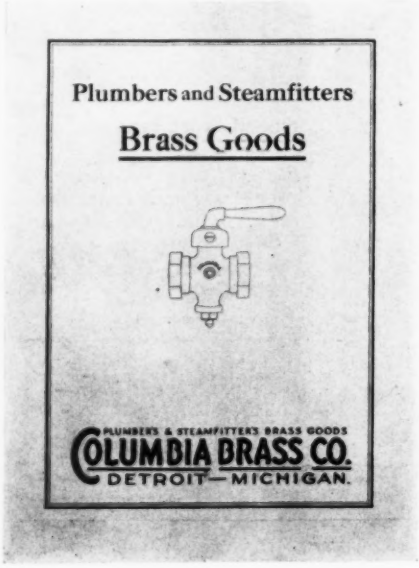
The remarkable feature in connection with this fitting

is that it is made with a number of flanges on each end. The flanges are ¾ inch from center to center and have the appearance of corrugations running around the fitting. In case the fitting is too long on either end it can be readily shortened by simply cutting off one or more of the flanges with a cold chisel and a hammer.

The H. W. Johns-Manville Co., New York City, manufacturers of the J-M Sanitary Closet Fitting, claim that it will last as long as the building in which it is installed, and they guarantee joints to be absolutely gas-tight after being made up. This company, which is well known in the plumbing field, has published an interesting booklet on the above subject, and will be glad to forward a copy of same upon request to anyone interested, who will mention "Domestic Engineering" when writing.

THE COLUMBIA BRASS CO'S. CATALOGUE.

The Columbia Brass Co., of 60 Washington Boulevard, Detroit, Mich., has just issued a very attractive catalogue illustrating and describing its brass goods for plumbers and steamfitters. The accompanying illustration is a miniature reproduction of the front cover design, the size of the catalogue being 9x12 inches. The list of goods illustrated and described in detail includes the following: High grade compression hose bibbs and plain bibbs in red metal; lavatory stops, nickel plated compression bibbs and stops of yellow metal, compression wash-tray bibbs, stub pattern; compression wheel handle sill cocks, fuller bibbs



New Catalogue of the Columbia Brass Co.

and basin cocks, compression china index basin cocks, low-down and semi low-down pattern; compression boiler cocks; ground key patent cap stops and stop and waste cocks, globe, gate, angle and check valves; radiator valves, steam, hot water and vacuum; traps, wastes and overflows, 4½ fuller bath cocks, No. 3 compression bath cocks, and bath supply pipes; steam cocks, gas service cocks and low-pressure pop safety valves. The catalogue is printed on highly glazed paper and only high-grade halftone engravings have been used in its production. Master plumbers and fitters who haven't received a copy of this catalogue can obtain one from the manufacturers upon application, mentioning "Domestic Engineering."

HEAT IN THE RIGHT PLACE AT THE RIGHT TIME.

The accompanying illustration shows a miniature reproduction of the cover of a very attractive and interesting booklet just issued by the Vapor Regulator Co., P. O. Box 3322, Philadelphia, Pa., describing and illustrating this company's atmospheric system of vapor heating, for which the claim is made that it supplies "the exact amount of heat in the right place at the right time." Following the explanation of this system's principle of opera-

Attractive Cover of New Booklet by the Vapor Regulator Co.

tion a detailed description of the pressure regulator and gauge is given with illustration. This again is followed by descriptions and illustrations of the company's vapor traps, safety valves, radiator valves and non-overflowing vents, making it all in all a most interesting booklet for anyone interested in heating literature. Readers not familiar with this system can obtain a copy of the booklet from the above company upon application, mentioning "Domestic Engineering."

"THE VALE OF AVOCA."

The Great Western Pottery Co., of Kokomo, Ind., and Tiffin, O., manufacturers of vitreous china sanitary ware, are to be congratulated on the excellent reproduction in colors of the Vale of Avoca, which adorns their monthly calendar for October. No lover of beautiful landscapes ought to be without a copy of this picture, and it can no doubt be obtained from the above company upon request, mentioning "Domestic Engineering." It was Thomas Moore who made the beauty of this landscape immortal in the following lines:

"Sweet vale of Avoca! How calm could I rest
In thy bosom of shade, with friends I love best.
Where the storms that we feel in this cold world should cease,
And our hearts, like the waters, be mingled in peace."

MR. MANUFACTURER

You have some slow-moving machinery or material that should be known to the trade, but must be sold with the minimum expense. Describe it in the Classified Department—4 cents a word per insertion.

Among the Plumbing and Heating Contractors

Illinois

Chicago.

The Health Department recently closed three theaters that had violated the ventilation ordinance. One of the theaters closed is owned by C. C. Wahlen, 43d Street and Cottage Grove Avenue. He applied for an injunction to restrain the city from closing his theater.

A Well-Known Chicago Master Plumber and His Establishment.

The accompanying illustration shows a good likeness of J. W. Tumalty, who has for many years conducted a successful plumbing business at 2251 Cottage Grove Avenue, Chicago. Mr. Tumalty is standing at the extreme

J. W. Tumalty (at right), with a Friend and Employes.

right. The gentleman at his side is one of his friends, and the other three men shown are journeymen plumbers in his employ. The party is standing in front of Mr. Tumalty's establishment.

The matter of getting the State of Illinois to separate the plumbing and heating specifications from the general contract is at present engaging the attention of the master plumbers of Illinois. On account of the recent failure of a large general contracting firm they consider this an opportune time to carry out the resolutions of the last State convention to advocate the separate letting of plumbing and heating on all public work. The matter, it is understood, is now up to the new state architect, Jas. B. Dibelka, of Chicago. Wm. J. Hilliard, president of the Illinois State Association, has recently been in communication with C. A. Dreier, president of the Chicago Local Association, with a view of having the latter appoint a committee to act with the State officials in calling upon Mr. Dibelka to urge their claims. This conference with the State Architect will be held shortly and it is fully expected that the master plumbers will be successful before the next State convention in securing the separate letting of the plumbing and heating contract in all State work.

On a recent Saturday a number of the members of the South Side Master Plumbers' Business and Social Club and their families enjoyed an outing at Starved Rock, Ill. The party comprising those who owned automobiles left Chicago on Saturday morning and arrived at their destination, a distance of 90 miles, the same afternoon. On the way out a stop was made for luncheon at Peru. The master plumbers and their families spent Sunday around Starved Rock. The trip was one of the most enjoyable ever undertaken by the club. Among those in the party were: H. P. Reger (guide), F. J. Dillenburg, A. R. Henry, H. Dieringer, John Kleker, John Delehant, J. J. Krantz, Chas. Taffe and Chas. D. Harris.

E. E. Melum, secretary of the Chicago Steam Heating and Ventilating Engineers' Association, 720 Schiller Building, Chicago, is receiving the congratulations of his many friends in the trade, on his wedding, which occurred on Wednesday, September 17th. The happy event took place at the home of the bride's parents, the bride being Miss Margaret Fife McKenzie, 4428 Gladys Avenue. Mr. and Mrs. Mellum will make their home at 747 S. 41st Ct., Chicago.

J. P. & J. W. O'Connor, general contractors, are preparing to construct a large ten-story office building at 1330 Wabash Avenue.

Michigan

Detroit.

Building throughout the city looked as if it was going to take a slump around the first of October, but according to the permits taken out so far this month, conditions are even in better shape than a year ago, despite the complaint being made by many retail merchants that business is quiet. The large automobile factories are again operating to full capacity and all talk of "tight money" is being cast to the winds.

The most notable plumbing and heating contracts awarded this week are as follows:

James H. Crumley, 284 Woodward Avenue, secured the contract for plumbing in the Fyfe Building at East Elizabeth Street. James Partlan secured the steam heating contract for the same job.

Johnsen & Larsen will install the hot water system in the new Paige-Detroit factory which will cost $100,000. The plumbing will be installed by the Vinton Co.

Albert Kahn, architect, is drawing plans for a building for the Detroit Athletic Club, which will be erected on Madison Avenue to cost $750,000. It will rival any of the athletic clubs in the country. Architects Stahl & Kinsey have plans in progress for a church to cost $70,000 to be erected in the spring. It will contain a swimming pool for the convenience of its members.

Roos & Wood, 176 Myrtle Street, have awarded the contracts for plumbing and steam heating for two residences on Chicago Boulevard.

A. L. Waltensperger, 1167 East Jefferson Avenue, will

install the plumbing and steam heating in a residence on Ferry Avenue.

Frank L. Card, 1862 Jos Campau Avenue, has been awarded the plumbing contract for a new school to be erected in Hamtramck. The steam heating contract went to the American Heating & Ventilating Co., Toledo, Ohio.

J. H. Kennedy, will install the plumbing in a ten-family brick apartment building now being erected on West Grand Boulevard.

Ernst Bros., Detroit, will install the plumbing and heating in the new factory building of the Burroughs Adding Machine Co.

G. A. Moeller, Detroit, is taking figures on a residence to be erected at New Baltimore. Bids close Oct. 23.

Other Cities in the State.

York & Sawyer, New York City, are architects for the $500,000 hospital to be erected in Grand Rapids during the coming year. Plans will be in readiness to submit to the contractors before January 1st.

C. B. McCreedy, of Rochester, has been awarded the contract for installing the steam heating plant in the new school building at Goodrich.

The contract for the public comfort station to be erected in Grand Rapids has been awarded, and the plumbing, heating and ventilating went to Van Rossum Bros. of that city.

Wells & Newton, New York City, will install the plumbing in the New Pantlind Hotel in Grand Rapids, which will be built at a cost of $1,000,000. The plumbing contract was the largest ever let for a single job in the Furniture city.

Robinson & Campau, Grand Rapids, have plans in progress for a high school to contain 31 rooms and to cost $300,000, and also an apartment building that will cost $20,000. Bids will soon be received.

George Thompson, Grand Rapids, was awarded the plumbing contract for the new $65,000 building for the Grand Rapids Herald now in course of construction. The heating contract went to the Phoenix Sprinkler Co.

Ohio

Columbus.

Since the operation of the new mechanic's lien law which has been in force for about two months, plumbers and others engaged in kindred lines have found the law very satisfactory generally. The owner of the building, if his time is limited, has found it convenient to investigate thoroughly before paying his bills, but the banks and building and loan associations have come forward and have taken this work off the hands of the owner to a large degree.

Despite the approach of winter, building operations in the Buckeye capital are still active. During the month of September the building inspectors department issued 257 permits having a valuation of $473,000, as compared with 236 permits and a valuation of $513,000 in September of last year. Since the first of the year the number of permits issued was 3,303 and the valuation, $4,087,000, as compared with 216 permits and a valuation of $3,927,000 for the corresponding period in 1912.

Estimates are being received by Weber, Werner & Adkins, of Cincinnati, O., for plumbing and heating for the eleven-story office building to be erected at Charleston, W. Va., for the Frankenberger Estate. Pittsburgh bids will be entered for this work. The building will cost about $100,000.

The Meinberg Plumbing & Heating Co., of Youngstown, O., has just secured the contract for the plumbing work in the $9,000 residence, which is to be built there by Edward Jonas.

Massachusetts

Worcester.—The contract for heating the classical high school addition has been awarded to the A. Burlingame Co., at its bid of $21,200; and Tucker & Rice secured the contract for the plumbing.

Pittsfield.—The Pomeroy school building committee has awarded the contract for plumbing to Doran Bros., whose bid of $6,885 was the lowest received. The heating contract went to the Robbins & Gamwell Co., for $11,450.

Ashland.—Russell and Clarence Greenwood, brothers, have purchased the plumbing and hardware business of Franklin Enslin & Co. Mr. Enslin, who has conducted the business for 36 years, has retired. The new proprietors have been employes of the old concern for many years and are well and favorably known in business and social circles.

Springfield.—Among the contracts which M. H. Duggan has in hand are the installation of heating systems in two new houses, one on Liberty Street and the other in another section of the city. The W. J. Hyland Mfg. Co. has been awarded the contract for plumbing in R. M. Butler's new residence in West Springfield. Andrew J. LaFleur has been awarded a contract for plumbing in a six-apartment house being erected on Oakland Street, for Marcus Penn. He has just completed the installation of plumbing and steam heating in Penn's new 14-room house on Forest Avenue and has in hand the plumbing and heating in connection with a new two-apartment house for Charles Sibley on Foster Square.

Connecticut

Bridgeport.—Contracts for plumbing and heating in the new residence of Dr. F. Winthrop Pyle on Washington Terrace have been placed with the W. P. Kirk Co. G. L. Beitner is doing the plumbing and Wellington & Co. the heating in the handsome residence on Main Street, for Mrs. J. H. Spittler.

Waterbury.—T. A. Walker reports the following contracts in hand: Plumbing and heating in new residence of H. A. Pease, Midgeon Avenue and plumbing and heating for new two-family house of A. H. Wall on the same street. The Barlow Bros. Co. has the contract for plumbing in connection with two factory buildings being erected in Naugatuck for the Rubber Regenerating Co. The same concern has a contract for plumbing in a new double house to be erected on State Street, for Mrs. E. M. Burrall.

Norwich.—The remodeling of the Beckwith block on Franklin Street is soon to start. The plumbing contract has been placed with C. O. Murphy.

Danbury.—Henry A. Brennan plans to establish a plumbing business in connection with his blacksmith business on Greenwood Avenue. He has engaged John Barnum, a well known and experienced plumber of Bethel, to have charge of the new department.

Middletown.—The Lyman D. Mills Co. has been awarded the contract for the plumbing, heating, roofing, metal work and ventilating for the new building being erected for the Farmer's & Mechanic's Savings Bank.

Minnesota

St. Paul.

McQuillan Bros., of 389 Selby Avenue, are installing plumbing and hot water heating in a new residence for Jas. Halsteadt at Bourne and Carter Streets.

J. F. McQuillan, Selby and Avon Streets, is installing plumbing and heating in F. E. Draper's residence at 227 Dayton Avenue and at 459 Holly Avenue.

George McConnon, of 506 St. Peter Street, is installing heating plants in eight new residences for the Pioneer Building Co., in a new residence for Verstreadt & Frankot, at Hall Avenue and Dearborn Street, for H. Steinmitz on Sunfish Road, and in the following new houses for the Home Building Co., at 1627 West Seventh Street, Baldwin and Walpole Streets, Grand Avenue and Snelling, 1864 Goodrich Avenue, 519 Aurora Avenue and East Minnehaha and Duluth Streets.

Nebraska

An Attractive Nebraska Plumbing Establishment.

The accompanying illustration is a reproduction of a photograph of H. H. Lembke's plumbing establishment, at Hastings, Neb. Mr. Lembke can be seen standing at

H. H. Lembke and Employes, Hastings, Nebr.

the left of the picture and the other persons in the photograph are members of his force. He reports business good and expects to do a whole lot of work before winter sets in.

North Platte, Neb.—R. F. Stewart's plumbing establishment, in Locust Street, in this city, was recently destroyed by the fire which visited his neighborhood. His loss is placed at $2,500, and was covered by insurance.

Foresman & Hoke, plumbers of San Dimas, Cal., report a lot of work in that locality. They have added a new auto-truck for delivery purposed and have put in a new solar heater department.

Washington

Tacoma.—George Frier, Sixth avenue, will receive bids shortly for heating and plumbing in a residence on North E street for F. M. Johnson.

The W. B. Coffee Plumbing Co., of 1012 A Street, reports business very heavy, particularly in the flat and hotel sections. Among the jobs which this concern has on hand at the present time are the plumbing and heating installations in the R. A. Anderson flat, Eleventh and D Streets involving the expenditure of about $3,200, and the Hotel Lawrence on A Street, where 52 lavatories are being installed. Several fine residence contracts, calling for both heating and plumbing, have also been signed recently.

The Yakima Valley Heating & Plumbing Co. of North Yakima, Wash., has taken the plumbing contract for the state armory at that place.

Pennsylvania

Pittsburgh and Vicinity.

The steam heating system for the $125,000 apartment building being erected at Pittsburgh, for Susan and Mary Bayard, will be installed by the Pittsburgh Heating Co., the contract having just been awarded.

The Anderson-Darragh Co. has been awarded the heating contract for the addition, being built to the Hamet Hospital at Erie, Pa. The plumbing work in this improvement has been awarded to the Erie Plumbing & Heating Co.

G. W. McKay, of Pittsburgh, has secured the contract for the plumbing in the $8,000 motion picture theatre which is being built there by Elmer H. Johnson.

The Baker-Smith Co. has taken the contract for heating the $6,000 garage being built by E. A. Woods.

The R. O. Miller Co., of Pittsburgh, Pa., has secured the contract for heating E. B. Cryor's new $4,000 residence. Thomas A. Allen will do the plumbing work.

Snively Plumbing Co. will install the heating system in the $10,000 residence being built for D. Morris Dempster.

Gus Krack & Co. secured the contract for the installation of a heating system in the $7,500 apartment building being erected in that city by the Florentine Land Co.

John P. Shaffer, of Pittsburgh, secured the heating work in the $25,000 residence which is being erected in Edgeworth by Frank R. Dravo.

George H. Soffel, of Pittsburgh, will do the plumbing in the $14,000 residence being erected by Dr. J. F. Edwards.

Philadelphia.

Geo. E. England, of 235 South 5th Street, has the contract for the plumbing and heating in the new Mission House which is being erected at 10th and Locust Streets.

H. T. Campbell, of 29th and Thompson Streets, has been awarded the heating contract at 2300 Thompson Street, for H. G. Sily.

Fr. Joy, of 4361 Germantown Avenue, has been awarded the contract to install new plumbing and heating systems in the new Continental Trust Building at 1301 North Broad Street. Consideration, $1,665.

Jas. F. Hallinan, of 52nd and Vine Street, is doing an

operation of 31 houses for M. Maloney at the corner of 58th Street and Cedar Avenue.

I. S. Shreve, Tacony, Pa., is doing the plumbing and heating in the new residence of J. Fettig, on Eadom Avenue. Consideration, $1,200.

Wm. T. Lewis, Fifth Street and Alleghany Avenue, is doing the plumbing and heating in the building on Sixth Street and Alleghany Avenue for L. Canavan.

J. Borden & Bro., of 18th Street and Fairmount Avenue, are installing heating apparatus in the property at 2114 North Uber Street, for J. H. Rauch.

Chas. Raupp, Westmoreland Street, is doing the plumbing and heating in the new house which is being constructed at 2320 Cedar Street for C. Roth.

J. Scholl, 2712 Girard Avenue, is making extensive alterations in the plumbing system in the new Poth Brewery at 31st and Master Street.

J. A. Grimes, 2700 Cambridge Street, reports quite a lot of small plumbing jobs on hand for the coming season.

Other Cities in the State.

W. N. Barnhart, of Pitcairn, has been given the plumbing and heating work in the $4,500 residence being built there by D. C. Peters.

Houseman & Co. of Carrick, a suburb of Pittsburgh, has been awarded the heating contract in the $5,000 home being built in Carrick by George Mellottz.

Harry Urban, who is building a $20,000 store and apartment in Carrick, has awarded the heating work to the Hall Heating Co., of Greensburg, Pa.

Plumbing work in the $6,000 bungalow being built by James E. Kopper of McKeesport, Pa., was awarded to George Wolf, of that city.

Jos. C. Brown, of Olney, Pa., has been awarded the contract to install the plumbing in 13 new houses which are being erected in Olney for J. Yundt.

At Duquesne, Pa., Charles Kaufman, who is building a $7,000 residence, has awarded the heating contract to T. P. Walker & Sons, of that place.

Chandley Bros. & Co., of Beaver Falls, Pa., has secured the plumbing contract for the new station at Koppel, Pa., which is being built by the Pennsylvania railroad at a cost of $5,500.

California

San Francisco.

The tariff changes have so far had no tangible effect on Pacific Coast trade conditions. There was no very great amount of merchandise released from bond at this port, and for the most part importers or prospective importers are still studying the tariff schedules, and will not be able to make definite offers for some time. The principal reduction which took place immediately was on pig iron, which was reduced $2.50 per ton, bringing some foreign grades below parity with American iron; but this has not caused much increase in demand. Whether the change will give any material advantage to local manufacturers of stoves, cast iron sanitary goods, etc., remains to be seen. There is no doubt that the importance of San Francisco as a port of entry for foreign goods will be greatly increased, but dealers in plumbing supplies do not believe their business will be directly affected to any great extent.

More importance is attached to the opening of the Panama Canal, which will soon bring San Francisco into closer relations than ever before with the Atlantic seaboard, and will greatly extend the territory for which San Francisco is the jobbing center. William R. Wheeler, manager of the Traffic Bureau of the Chamber of Commerce, and formerly with Holbrook, Merrill & Stetson, the local plumbing supply jobbers, in a recent speech before the local advertising association, stated that San Francisco jobbers must prepare to handle a quadrupled business area, with a vastly increased buying power, immediately after the opening of the Canal. The railroads, he said, will lose a large amount of the less profitable business, which will be replaced by the increase in hauls of the higher classes; while local manufacturers will gain by low rates on raw materials brought as return cargo by lumber vessels. Even greater, he said, will be the gain from immigration.

The final arrangements for the dissolution of partnership of Lettich Bros., a prominent local plumbing firm, have been completed. John M. Lettich has retired, and the business is being continued by Antone Lettich under his own name.

The Peck & Draper Co. of 525 Market Street, San Francisco, is now demonstrating an automatic single unit system of hot water heating and hot water supply invented by George Peck. The system is intended for installation in residences, apartment houses, etc.

J. E. O'Mara has secured a plumbing contract for a small brick building on Stevenson Street, near Seventh, for $495.

O. Kurz has taken a contract for plumbing, gasfitting, electrical work, heating, etc., in connection with additions and alterations to a building at Ellis and Mason Streets. Consideration, $11,000.

Boscus Bros. and the Atlas Heating and Ventilating Co. have taken contracts for plumbing and heating in a 3-story apartment building on Sacramento Street, near Polk.

What will become of the late M. Levy's plumbing business is a matter of some interest to the trade. A few weeks ago, when it became evident that he could no longer supervise the work, an effort was made to sell out, and as no purchaser came forward immediately, arrangements were made to sell at auction under the supervision of J. Gollober, who will endeavor to dispose of the stock, equipment and 8-year lease of the premises as a going concern. The stock is valued at $25,000, with tools and machinery valued at $10,000. Whether any of the established plumbers figure on taking over the business intact is not known, but this would appear doubtful, as most of the shops are well equipped and have locations under lease for considerable periods.

Antone Lettich has taken a contract for plumbing, etc., in a building on Bush Street, near Stockton, at $4,487. The heating equipment will be installed by the General Engineering Co., for $596, and electric wiring, amounting to $1,050, will be done by the Butte Engineering & Electric Co.

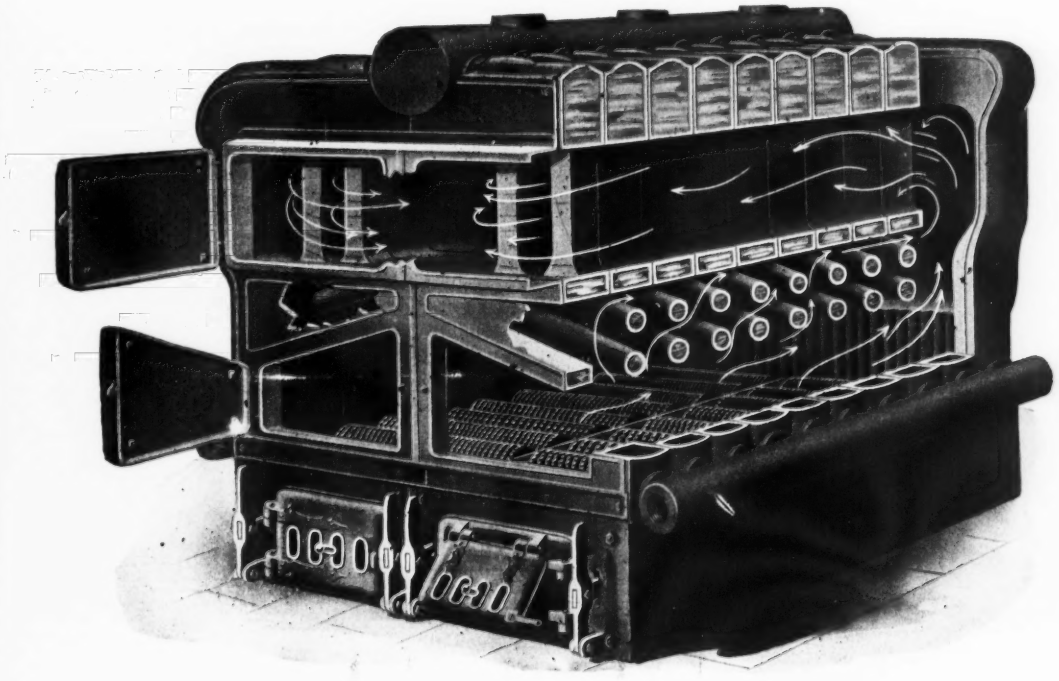
The Turner Co. has taken a $1,490 plumbing contract for a 2-story theater building on Broadway near Grant Avenue.

The following contracts have been let on a 3-story lodging house for Mary Marsicano at Broadway and Grant Avenue: Steam heating, to Kiernan & O'Brien at $3,325; and plumbing to the J. Looney Co. at $7,525.

Neal Bros., of Oakland, Cal., have been awarded a contract for making extensive plumbing repairs on the Alameda County Court House at Oakland. The contract will amount to about one thousand dollars.

"RICHMOND"

Fifty-Three Inch Boiler



"RICHMOND" Separate Base, Header Construction Boiler
Largest Capacity: 9,450 feet Steam; 15,600 feet Water.
Note Large Grate Surface and Unobstructed Flue Travel.

Write for detail description

RICHMOND RADIATOR COMPANY

INCORPORATED

Manufacturers

"RICHMOND" Boilers, Radiators, Vacuum Cleaners and Enameled Ware

General Office and Sales Rooms

1480 Broadway, Cor. 42nd Street, New York City

Boston	Philadelphia	Pittsburgh
69-71 Federal St.	2241 North American St.	Jenkins Arcade Bldg.

Good News for Advertisers

¶ Beginning with the issue of December 27 (the New Year's Number), the four cover pages of ***Domestic Engineering*** will each week be printed in two colors.

¶ For a limited time the entire front cover will be for sale to ***one advertiser only***—but no advertiser may use it more than once in any one month.

¶ The size of the space is 7¾ x 8⅜ inches, outside measure, 7¼ x 8 inches inside border, the price $150 net per issue.

¶ The open dates for 1914 are as follows:

January 10	April 18	July 25	October 17
January 24	May 2	August 8	October 31
February 7	May 16	August 22	November 14
February 21	May 30	September 5	November 28
March 7	June 13	September 19	December 12
March 21	June 27	October 3	December 26
April 4	July 11		

¶ This is a splendid opportunity to secure the acme of advertising value, heretofore unobtainable, and which will enable you to dominate the particular issues that you use.

¶ Prompt reservations of space are necessary to insure the insertions you most desire and will be made in the order received. Wire at our expense.

Domestic Engineering

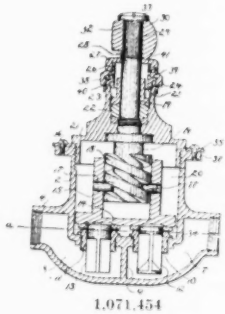
445 Plymouth Court CHICAGO

Patents

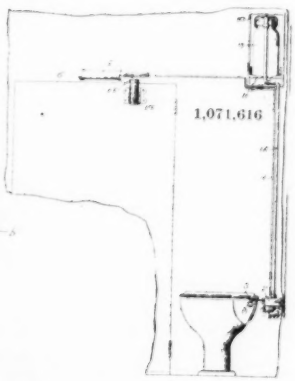
Plumbing Department.

1,071,454. Mixing-Valve. William G. Newton, New Haven, Conn., assignor to The Peck Bros. & Co., New Haven, Conn., a Corporation. In a mixing valve, the combination with a casing having inlet chambers and a mixing and outlet chamber connected with the inlet chambers by ports, valves adapted to open and close said ports, said valves connected with a valve stem, a bonnet through which the valve stem projects, a stuffing box around the valve stem in said bonnet, a ring entering the upper end of the bonnet, a clamping collar for connecting the ring to the bonnet, said ring carrying a stop pin, an operating handle attached to the valve stem, and a shoulder on the handle adapted to engage with said stop pin, whereby the movement of the handle is arrested.

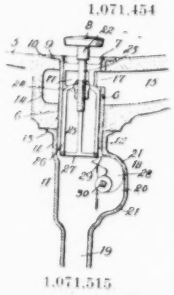
1,071,616. Device for Disinfecting Purposes. Julian G. Goodhue, Chicago, Ill. In a device of the class described, the combination with an air-tight receptacle, a tube communicating with the interior of said receptacle near its top, and a siphon tube inclosed by said first-mentioned tube leading to the bottom of the receptacle.



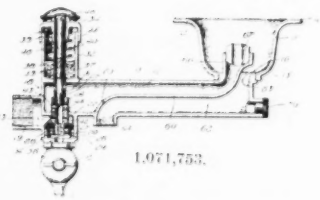
1,071,454



1,071,616



1,071,515



1,071,753.

1,071,515. Operating Mechanism for Drain-Plugs. Charles B. Foster, Buffalo, N. Y. In mechanism of the class described, the combination of a drain passage provided with a protuberant cam chamber, a rotatable cam shaft passing through the cam chamber from side to side thereof, a cam mounted on the shaft and having a curved acting face, and adapted to be drawn back into the cam chamber to leave the drain passage unobstructed, a plug adapted to close the passage, a slidable mounting for a plug, adapted, when raised, to bear upon the cam at a suitable point to force the cam back into the cam chamber and prevent the plug from being lowered

Being Up-to-Date and Up-to-Scratch

The purpose of it all, of course, is for the heating contractor to put himself in a position to earn the most money.

The first step is to learn the latest developments in modern heating requirements and modern heating systems.

No better way to become efficient on the heating subject than to drop a postal to the Vapor Heating Co., asking for the three most authoritative text books on modern vapor heating: "The Truth About Vapor," "The Broomell System of Vapor Heating," and "Some Installations of the Broomell System of Vapor Heating." They cost you nothing and a knowledge of the

Broomell System of Vapor Heating

shows the way to biggest profits.

You learn the Broomell advantages to YOU; ease of installation; no expensive delays, costly changes, experiments, tinkering. (We assume all responsibility for efficiency and service if installed in accordance with our plans and specifications.)

You learn the Broomell advantages to YOUR CUSTOMER; perfectly heated building with least fuel costs; none of the bother and nuisances attendant upon steam and hot water systems.

You learn the superiorities of the Broomell Vapor System of Heating which make it the one called for by up-to-date customers and the one carried by the up-to-date contractor. Incidentally, it is the up-to-date contractor who makes the money.

Write for booklets today, addressing—

VAPOR HEATING COMPANY

552 North American Building Philadelphia

"AMERICAN"
ANTI-SYPHON AND RESEALING TRAPS
Are the best that experienced and competent workmanship can produce
FROM AN ARTISTIC
AS WELL AS
SANITARY POINT OF VIEW
Deep water seal—over 7". Full waterway. Ground joint at outlet. Artistic in design. Superior in finish. Castings smooth inside and out.

AMERICAN SANITARY MFG. CO.
ABINGDON, ILL.

Water Tight Connections In Soil Pipe Work
The easiest and best method of making absolutely water tight connections in soil pipe work, is to use
The Sisson Insertable Joint
This joint does away with the old method of springing the stack or removing whole lengths of pipe. With the SISSON it is never necessary to disturb pipe.

R. ESTABROOK'S SONS, South Boston, Mass.

The Best Insurance
Against heat loss is provided by the
M. & F. Patented Gas Boiler.
The narrow zig-zag fire or flue passages absorb 95% of all heated gases.
Can you treat a customer better than to save him money on his fuel bill?
Our catalog will be sent the minute your request comes to hand.
Macbeth-Fassett Co., :-: Cleveland, Ohio

The MURDOCK "Bubble-Font"
A Practical Out-Door Drinking Device
It's not a fancy drinking fountain that gives you more trouble than it's worth after it's installed. It's built for service of the roughest kind.
Anti-Freezing—Self-Closing
—Non-Pollutable
Just the thing to stand the wear and tear of a school yard, public street, park, etc. Always "on the job," winter as well as summer because it is anti-freezing.
Send for our descriptive booklet giving full information
The Murdock Mfg. & Supply Co.
Cincinnati, Ohio

under pressure, and means for operating the cam, substantially as described.

1,071,753. Valve for Bubbling Fountains. Edward L. Kellan, Chicago, Ill. A valve comprising, in combination with a hollow outlet member adapted for communication at its inlet end with a source supplying fluid under pressure, said member being provided at its inlet end with an opening surrounded by a body seat, a hollow valve piece slidable in said opening and provided with a seat member to engage said body seat and above said seat member with vertically separated inlet and outlet ports communicating with the hollow interior of the valve piece, said valve piece being provided with a hollow stem, a bonnet connected with the hollow member through which said stem extends, a cap slidable on the outer end of the bonnet and connected to said stem and spring within the bonnet and acting on said cap to normally hold the valve piece seat member engaged with the body seat and to maintain the inlet port of the valve piece above said body seat.

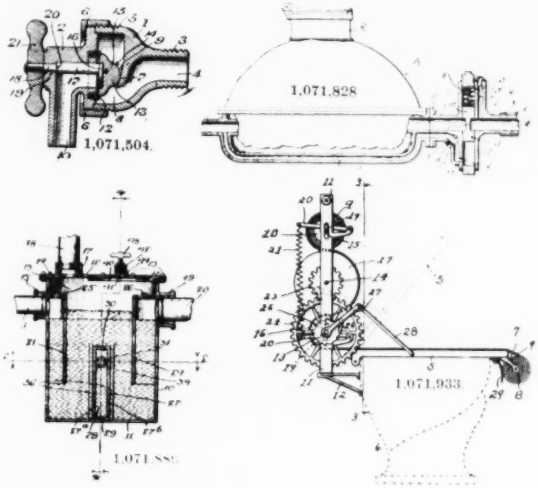
1,071,504. Washerless Faucet. Henry C. Brown, Brooklyn, N. Y., assignor of one-half to Henry Stockman, Englewood, N. J. In a valve, a casing having an inlet and an outlet, a spindle rotably mounted in said casing and passing through said outlet, a valve seat removably mounted in said casing and encircling said outlet and said spindle, an eccentric fixed to said spindle, a valve having a recess therein adapted to receive said eccentric and provided with a cam face, said valve being movably mounted on said eccentric, an abutment formed on said casing between said inlet and said valve seat, said abutment having a cam face in the path of movement of said valve cam face, and means to operate said spindle to move said valve from one position to another, said valve in closed position contacting with said abutment whereby the said valve is maintained in closed position.

1,071,828. Water-Meter. Henry C. Turner and George W. Hamm, Represa, Cal. The combination with a water meter, of a high pressure main leading thereto, and a low pressure line leading therefrom, a valve casing in the low pressure line formed with a high pressure chamber and a low pressure chamber and a passage communicating with low pressure line and with the low pressure chamber, a double acting piston valve controlling the passage provided with a head moving in the high pressure chamber, and a head moving in the low pressure chamber, said valve casing having a channel affording communication between the passage and the low pressure chamber, a by-pass leading from the high pressure main to the high pressure chamber of the valve casing, a pressure equalizer spring in the low pressure chamber bearing against the head of the piston therein, and a two-way valve controlling a drain or relief port for the high pressure chamber.

1,071,889. Grease-Trap. George J. Dehn, Chicago, Ill. In a grease-trap, the combination of a basin, inlet and outlet connections for the drainage disposed adjacent the top of the basin, a baffle separately formed from the basin extending transversely across the bottom of the basin and having a chamber therein, pipe connections leading to and from the ends of said chamber respectively and through the wall of the basin, and means for directing the drainage downwardly from the inlet connection to the bottom of the basin at one side of said baffle.

1,071,933. Sanitary Closet-Seat Cover. Hans Luthi, Kenosha, Wis. In combination, a closet seat; a frame

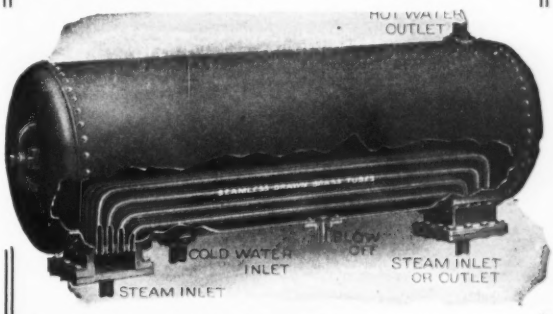
mounted adjacent said closet seat and having slots therein; a shaft journaled through the central portion of said frame; a feed roller carried by said shaft; a second shaft rotatively mounted in slots in said frame; a second feed roller loosely mounted on said second shaft; meshing gears on said first and second shafts; a ratchet and pawl gearing on said second shaft and operatively connected with said closet seat; a third shaft rotatively mounted in slots in said frame; a web take-up roller on said third roller; and spring actuated levers engaging said second and third shafts binding said second feed roller and said take-up roller against said first feed roller, substantially as described.



1,072,072. Gas Water-Heater. William B. Bastian, Chicago, Ill., assignor to Bastian-Morley Co., Pierre, S. D., a Corporation of South Dakota. A water-heater having, in combination, a boiler, a spreader formed of two substantially horizontal continuous plates, arranged one above the other and spaced apart so as to leave between them a chamber of substantially saucer shape for the passage of water, a plurality of hollow branches located above said chamber and communicating at their outer ends with the outer portion of said chamber, at different distant points, a water circulating pipe, the lower end of which communicates with the inner end of said hollow branches, and the upper end of which communicates with the boiler, and a second circulating pipe communicating with the boiler and with the bottom of the spreader at the center of the saucer shaped chamber, aforesaid.

1,072,274. Water-Heating Device. Victor Joseph Touchard, Paris, France. In an apparatus for the heating of water, the combination with a casing comprising a drum formed with air inlet and outlet openings, of a bottom on the drum, said bottom having an annular vertical wall and a horizontal flange extending from said vertical wall, the lower portion of the drum being supported on the bottom and fitting snugly against the vertical wall, a top for the drum, the top extending between the vertical plane of the drum, sleeves interposed beyond the extended portion of the top and the horizontal flange of the bottom, bolts extending through the top, the horizontal flange and the sleeves to lock the casing together, a series of vertically disposed coils in the drum, the coils being spaced apart to form a central vertical passage, water inlet and outlet pipes connected with the coils, a burner in the bottom of the casing in alinement

Discharges Condensation As Rapidly As Formed



Constructed entirely of heavy boiler plate, much heavier than ordinary tanks,

THE PATTERSON HOT WATER TANK

is an acknowledged improvement.
The Patterson has no leaky return bends or coils. It contains a number of tubes whose area is always greater than the steam pipe—hence, condensation is discharged as rapidly as it forms, securing full benefit of the heating surface.

For information regarding a REAL HOT WATER TANK write for Catalog to

FRANK L. PATTERSON & CO.
NEW YORK

We always carry in our warehouse, ready for immediate shipment, a large stock of our complete line of

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Vitreous Sanitary

EARTHENWARE

All that is **Best** in sanitary earthenware is found in the **"Alliance" Line.**

Jobbers, if we have not yet served you, send us your first order and see what our product stands for and what our prompt service means.

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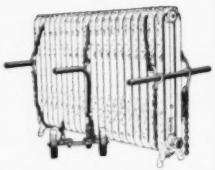
THE BOWLUS
Auto Pneu **MATIC** Water Closet
Simple Sanitation—Neat Economy
In use in all sections of the U. S.
Has But One Active Part
Guaranteed Positive in Operation
Adaptable for Buildings of Every Character
For Schools, Our Juvenile Bowl; A Profit Maker and a Business Getter. Write Us or Consult Your Jobber
The Bowlus Mfg. Co.
Springfield, Ohio

PAYS FOR ITSELF ON THE FIRST JOB



Because it is strong, and adjustable for carrying the largest radiators **quickly** up and down narrow crooked stairways and halls,

BUELL'S COMBINED CARRIER AND TRUCK

pays for itself on the first job.
No matter where radiation is desired you will find our Carrier saves labor, time and strength.
It is justly **known everywhere as the steamfitter's best friend.**
Write for details and prices.
BUELL BROTHERS, Fulton, N. Y.

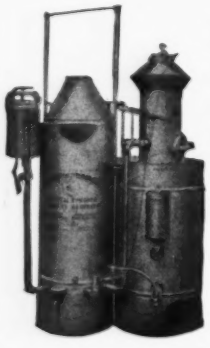
It Means Dollars To You

Take time and figure out what it means in dollars to you to have your Torch and Fire Pot work perfectly on the job. Clayton & Lambert Fire Pots and Torches are sold under the maker's guarantee and for over a quarter of a century have maintained a reputation for perfect operation, practical and durable construction. Experimenting has never been done at the expense of the user, and C. & L. tools embody every up-to-date improvement and are sure to please and satisfy.

Your nearest jobber will supply our line at factory price or we will ship direct if cash accompanies the order. Send for our Booklet—It's free.

No. 32 Torch. Price each $4.00 Net.
No. 38 Torch. (One Size Smaller.) Price each $3.50 Net.

Clayton & Lambert Mfg. Co.
Detroit, Mich., U. S. A.



GIVE your Customers Light made by the IDEAL EPWORTH Generator which is guaranteed to give satisfaction and each sale will bring you another.

Ideal Epworth Acetylene Co.
General Office:
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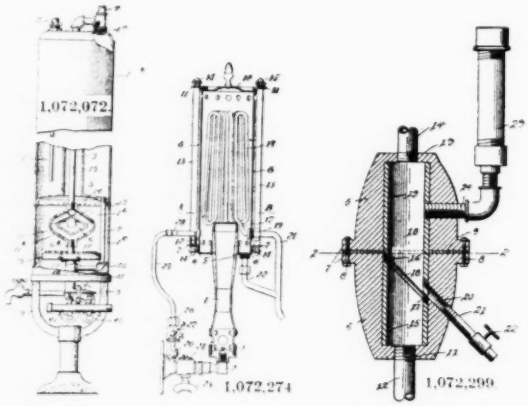
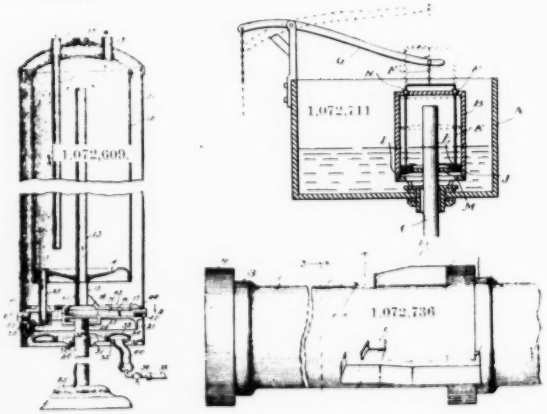
Waterloo, Iowa **Anderson, S. C.**

with the central vertical passage between the coils, and means for controlling the burner.

1,072,299. Water-Strainer. William A. Bedal, Port Huron, Mich. A water strainer comprising a casing formed by an upper section and a lower section, means for securing said sections together, an inlet pipe communicating with the interior of the casing through the top thereof, a discharge pipe connected to the bottom of the casing, a lining fitted within the lower section and having its upper end inclined to a horizontal plane so as to form a supporting shoulder, a gasket bearing against



said shoulder, a screen supported by the gasket, a lining fitted within the upper section and projecting into the lower section, the lower end of said last mentioned lining being parallel to the upper end of the first mentioned lining and engaging the screen so as to lock it in position, the lower section being formed with a discharge passage extending upwardly and inwardly and opening upon the interior of the casing directly above the lower end of the screen, means for controlling the flow of material through the discharge passage, and an air chamber in communication with the upper end of the casing.

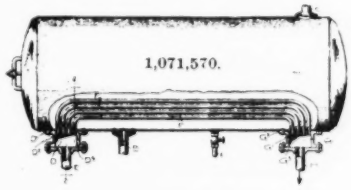


1,072,609. Water-Heating Apparatus. William Hawks, Duluth, Minn., assignor of one-half to Charles W. Andrews, Duluth, Minn. A water heater comprising a body having an annular water chamber and an outlet chamber encompassed by the annular chamber, the bottom of the second recited chamber being located in a plane above the bottom of the annular chamber, an inlet passage for the inner chamber leading from the annular chamber and inclining upwardly therefrom, an outlet for the inner chamber leading through the top thereof and an inlet

opening for the annular chamber, the bottom of the latter chamber adjacent the inlet opening being depressed.

1,072,711. Siphon Flushing Apparatus. Edward H. Gove, Biddeford, Me. In a siphon flushing apparatus, a tank, a siphon comprising a short leg and a long leg, a plunger mounted in the short leg comprising two disks, one above the other, the two disks, when in contact, substantially closing the short leg, said disks being provided with non-registering openings, the two disks being mounted upon plunger rods, the lower disk rigidly secured thereto and the upper disk freely slidable thereon, and means for raising the lower disk to a point spaced apart below the intake of the long leg, the upper disk being free to rise above said intake.

1,072,736. Pipe-Coupling. Eugene J. Kelly, Washington, D. C. The combination with the sections of a pipe, one section formed with pivotal recesses undercut at their bases and the other section with inclined lugs undercut at their bases, of adjustable clamps having lugs formed with flanges to engage the undercut portion of the undercut recesses and be swung over the lugs and engage the undercut recesses of the same, and a gasket between the pipe sections, so that the sections may be drawn together and secured in position.



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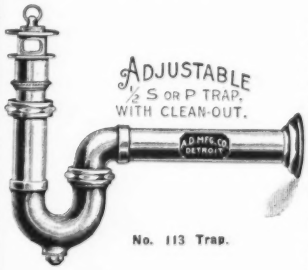

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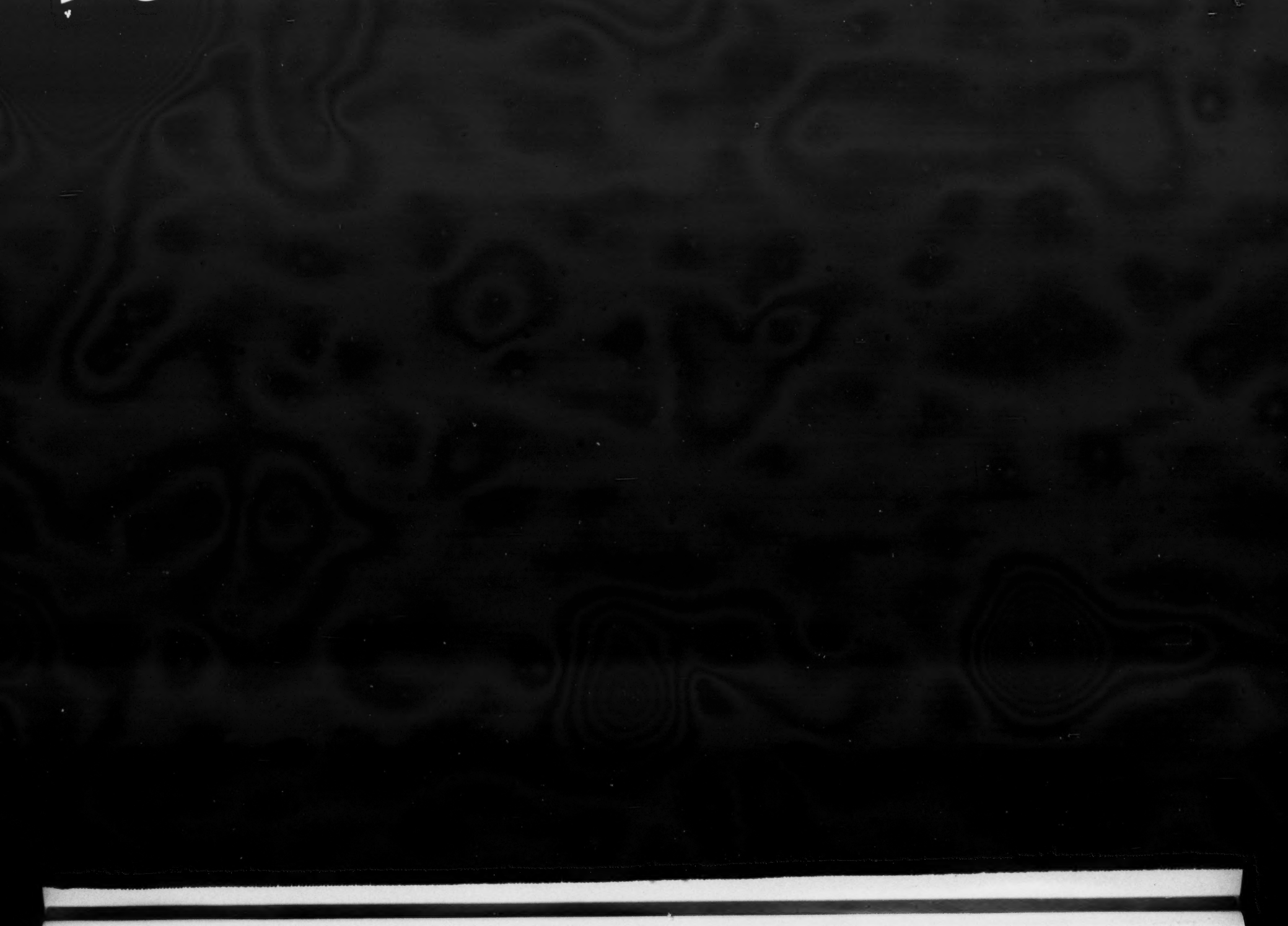
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